

Argonne National Laboratory

COMPILATION OF ENDF/B DATA
FOR MAGNESIUM, TITANIUM, VANADIUM,
MOLYBDENUM, AND GADOLINIUM

by

E. M. Pennington and J. C. Gajniak

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Reactor Physics Division

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TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	11
I. INTRODUCTION	11
II. MAGNESIUM	12
A. Outline of Data Included	12
B. Sources of Magnesium Data	13
1. Total Cross Section	13
2. Elastic Scattering Cross Section	13
3. Inelastic Scattering Cross Section	13
4. (n, γ) Cross Section	13
5. (n,2n), (n,p), and (n, α) Cross Sections	13
6. $\bar{\mu}_L$, ξ , and γ	13
7. Elastic Scattering Legendre Coefficients	14
8. Secondary-energy Distributions	14
9. Thermal-neutron Scattering Law	14
C. Comments on Magnesium Cross Sections	15
III. TITANIUM	15
A. Outline of Data Included	15
B. Sources of Titanium Data	15
1. Total Cross Section	15
2. Elastic Scattering Cross Section	16
3. (n, γ) Cross Section	16
4. Inelastic Scattering, (n,2n), (n,p), and (n, α) Cross Sections	16
5. $\bar{\mu}_L$, ξ , and γ	16
6. Elastic Scattering Legendre Coefficients	16
7. Secondary-energy Distributions	17
8. Thermal-neutron Scattering Law	17
C. Comments on Titanium Cross Sections	17
IV. VANADIUM	17
A. Outline of Data Included	17
B. Sources of Vanadium Data	18
1. Total Cross Section	18
2. Elastic Scattering Cross Section	18

TABLE OF CONTENTS

	<u>Page</u>
3. (n, γ) Cross Section	18
4. Inelastic Scattering Cross Section	18
5. (n,2n) Cross Section	19
6. (n,p) Cross Section	19
7. (n, α) Cross Section	19
8. $\bar{\mu}_L$, ξ , and γ	20
9. Elastic Scattering Legendre Coefficients	20
10. Secondary-energy Distributions	20
11. Thermal-neutron Scattering Law	20
C. Comments on Vanadium Cross Sections	20
V. MOLYBDENUM	21
A. Outline of Data Included	21
B. Sources of Molybdenum Data	21
1. Total Cross Section	21
2. Elastic Scattering Cross Section	21
3. (n, γ) Cross Section	22
4. Inelastic Scattering Cross Section	22
5. (n,2n) and (n,3n) Cross Sections	22
6. $\bar{\mu}_L$, ξ , and γ	22
7. Resonance Parameters	22
8. Elastic Scattering Legendre Coefficients	22
9. Secondary-energy Distributions	23
10. Thermal-neutron Scattering Law	23
C. Comments on Molybdenum Cross Sections	23
VI. GADOLINIUM	24
A. Outline of Data Included	24
B. Sources of Gadolinium Data	24
1. Total Cross Section	24
2. Elastic Scattering Cross Section	25
3. (n, γ) Cross Section	25
4. Inelastic Scattering Cross Section	25
5. (n,2n) and (n,3n) Cross Sections	25
6. $\bar{\mu}_L$, ξ , and γ	26
7. Resonance Parameters	26
8. Elastic Scattering Legendre Coefficients	26
9. Secondary-energy Distributions	26
10. Thermal-neutron Scattering Law	27

TABLE OF CONTENTS

	<u>Page</u>
C. Comments on Gadolinium Cross Sections.	27
VII. GRAPHS.	27
A. Smooth Cross Sections.	27
B. Cross Sections Calculated from Resonance Parameters . .	46
C. Elastic Scattering Angular Distributions	50
D. Secondary-energy Distributions	53
VIII. ENDF/B LISTINGS.	62
APPENDIX A--ENDF/B Listing for Magnesium.	63
APPENDIX B--ENDF/B Listing for Titanium	73
APPENDIX C--ENDF/B Listing for Vanadium.	85
APPENDIX D--ENDF/B Listing for Molybdenum.	98
APPENDIX E--ENDF/B Listing for Gadolinium.	109
ACKNOWLEDGMENTS	120
REFERENCES.	121

LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Page</u>
1.	Magnesium Total Cross Section	28
2.	Magnesium Elastic Scattering Cross Section	29
3.	Magnesium Inelastic Scattering Cross Section	29
4.	Magnesium (n, γ) Cross Section	30
5.	Magnesium (n,p) Cross Section	30
6.	Magnesium (n, α) Cross Section	31
7.	Magnesium Average Elastic Scattering Cosine, $\bar{\mu}_L$	31
8.	Magnesium Average Logarithmic Energy Decrement, ξ	32
9.	Magnesium γ	32
10.	Titanium Total Cross Section	33
11.	Titanium Elastic Scattering Cross Section	33
12.	Titanium Inelastic Scattering Cross Section	34
13.	Titanium (n,2n) Cross Section	34
14.	Titanium (n, γ) Cross Section	34
15.	Titanium (n,p) Cross Section	35
16.	Titanium (n, α) Cross Section	35
17.	Titanium Average Elastic Scattering Cosine, $\bar{\mu}_L$	35
18.	Titanium Average Logarithmic Energy Decrement, ξ	35
19.	Titanium γ	36
20.	Vanadium Total Cross Section	36
21.	Vanadium Elastic Scattering Cross Section	36
22.	Vanadium Inelastic Scattering Cross Section	37
23.	Vanadium (n,2n) Cross Section	37
24.	Vanadium (n, γ) Cross Section	37
25.	Vanadium (n,p) Cross Section	38
26.	Vanadium (n, α) Cross Section	38
27.	Vanadium Average Elastic Scattering Cosine, $\bar{\mu}_L$	38
28.	Vanadium Average Logarithmic Energy Decrement, ξ	38
29.	Vanadium γ	39

LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Page</u>
30.	Molybdenum Smooth Total Cross Section	39
31.	Molybdenum Smooth Elastic Scattering Cross Section	40
32.	Molybdenum Inelastic Scattering Cross Section	40
33.	Molybdenum (n,2n) Cross Section	41
34.	Molybdenum Smooth (n, γ) Cross Section	41
35.	Molybdenum Average Elastic Scattering Cosine, $\bar{\mu}_L$	42
36.	Molybdenum Average Logarithmic Energy Decrement, ξ	42
37.	Molybdenum γ	42
38.	Gadolinium Smooth Total Cross Section	43
39.	Gadolinium Smooth Elastic Scattering Cross Section	43
40.	Gadolinium Inelastic Scattering Cross Section	43
41.	Gadolinium (n,2n) Cross Section	44
42.	Gadolinium (n,3n) Cross Section	44
43.	Gadolinium Smooth (n, γ) Cross Section	44
44.	Gadolinium Average Elastic Scattering Cosine, $\bar{\mu}_L$	45
45.	Gadolinium Average Logarithmic Energy Decrement, ξ	45
46.	Gadolinium γ	46
47.	Molybdenum Total Cross Section from Resonance Parameters, 4-1000 eV	46
48.	Molybdenum Elastic Scattering Cross Section from Resonance Parameters, 4-1000 eV	47
49.	Molybdenum (n, γ) Cross Section from Resonance Parameters, 4-1000 eV	47
50.	Gadolinium Total Cross Section from Resonance Parameters below 50 eV	48
51.	Gadolinium Elastic Scattering Cross Section from Resonance Parameters below 50 eV	48
52.	Gadolinium (n, γ) Cross Section from Resonance Parameters below 50 eV	49
53.	Gadolinium Total Cross Section from Resonance Parameters, 0.001-0.2 eV	49

LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Page</u>
54.	Gadolinium Elastic Scattering Cross Section from Resonance Parameters, 0.001-0.2 eV.	49
55.	Gadolinium (n, γ) Cross Section from Resonance Parameters, 0.001-0.2 eV	50
56.	Magnesium Elastic Scattering Angular Distribution at 0.991 MeV	50
57.	Magnesium Elastic Scattering Angular Distribution at 18 MeV	51
58.	Titanium Elastic Scattering Angular Distribution at 0.991 MeV.	51
59.	Titanium Elastic Scattering Angular Distribution at 18 MeV.	51
60.	Vanadium Elastic Scattering Angular Distribution at 0.982 MeV.	51
61.	Vanadium Elastic Scattering Angular Distribution at 15 MeV	52
62.	Molybdenum Elastic Scattering Angular Distribution at 1 MeV	52
63.	Molybdenum Elastic Scattering Angular Distribution at 15 MeV	52
64.	Gadolinium Elastic Scattering Angular Distribution at 1 MeV	52
65.	Gadolinium Elastic Scattering Angular Distribution at 15 MeV	53
66.	Magnesium--Probability for Inelastic Scattering to the First Level	54
67.	Magnesium--Probability for Inelastic Scattering to the Second Level	54
68.	Magnesium--Probability for Inelastic Scattering to the Third Level	54
69.	Magnesium--Probability for Inelastic Scattering to the Fourth Level	54
70.	Magnesium--Probability for Inelastic Scattering to the Continuum	55
71.	Magnesium-- $\theta(E)$ for Inelastic Scattering.	55
72.	Magnesium-- $\theta(E)$ for the (n,2n) Reaction	55
73.	Titanium--Probability for Inelastic Scattering to the First Level	56

LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Page</u>
74.	Titanium--Probability for Inelastic Scattering to the Second Level	56
75.	Titanium--Probability for Inelastic Scattering to the Third Level	56
76.	Titanium--Probability for Inelastic Scattering to the Fourth Level	56
77.	Titanium--Probability for Inelastic Scattering to the Continuum	57
78.	Titanium-- $\theta(E)$ for Inelastic Scattering	57
79.	Titanium-- $\theta(E)$ for the (n,2n) Reaction.	57
80.	Vanadium--Probability for Inelastic Scattering to the First Level	57
81.	Vanadium--Probability for Inelastic Scattering to the Second Level	58
82.	Vanadium--Probability for Inelastic Scattering to the Third Level	58
83.	Vanadium--Probability for Inelastic Scattering to the Fourth Level	58
84.	Vanadium--Probability for Inelastic Scattering to the Continuum	58
85.	Vanadium-- $\theta(E)$ for Inelastic Scattering.	59
86.	Vanadium-- $\theta(E)$ for the (n,2n) Reaction	59
87.	Molybdenum--Probability for Inelastic Scattering to the First Level	59
88.	Molybdenum--Probability for Inelastic Scattering to the Second Level	59
89.	Molybdenum--Probability for Inelastic Scattering to the Third Level.	60
90.	Molybdenum--Probability for Inelastic Scattering to the Fourth Level	60
91.	Molybdenum--Probability for Inelastic Scattering to the Continuum.	60
92.	Molybdenum-- $\theta(E)$ for Inelastic Scattering	60

LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Page</u>
93.	Molybdenum-- $\theta(E)$ for the (n,2n) Reaction	61
94.	Molybdenum-- $\theta(E)$ for the (n,3n) Reaction	61
95.	Gadolinium-- $\theta(E)$ for Inelastic Scattering.	61
96.	Gadolinium-- $\theta(E)$ for the (n,2n) Reaction	61
97.	Gadolinium-- $\theta(E)$ for the (n,3n) Reaction	62

TABLE

<u>No.</u>	<u>Title</u>	<u>Page</u>
I.	Vanadium Inelastic Scattering at 2.35 MeV	19

COMPILATION OF ENDF/B DATA
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ABSTRACT

The compilation of ENDF/B neutron cross-section data for the materials magnesium, titanium, vanadium, molybdenum, and gadolinium is presented. All the data in the ENDF/B format are listed, and graphs of much of the data are presented.

I. INTRODUCTION

The Cross Section Evaluation Working Group (CSEWG) was organized in spring of 1966 to produce a coordinated system among laboratories for the evaluation, storage, and processing of neutron cross-section data. The group, which consists of representatives of approximately 15 government and industrial laboratories, met at Brookhaven National Laboratory in June and November 1966 and May 1967. At the June 1966 meeting, members of the group agreed to compile cross-section data for the materials of interest in nuclear-reactor applications and to supply FORTRAN codes to process the data. The Argonne contribution to the project was to consist of the MC² code,¹ which calculates multigroup cross sections from basic nuclear data, and the compilation of cross sections for magnesium, titanium, vanadium, molybdenum, and gadolinium. The data for these five materials are compiled here.

The cross sections and other nuclear data compiled by the CSEWG members form the ENDF/B system. (ENDF stands for Evaluated Nuclear Data File; B is used to distinguish the system from the previously existing ENDF/A.²) The ENDF/B system contains complete evaluations for each material in the sense that all data required to perform reactor calculations involving that material are included. The ENDF/A system, on the other hand, may contain partial evaluations, such as a certain type of cross section over a limited energy range, for example. The types of data included in ENDF/B and the punched-card formats involved are described in Ref. 3.

To complete the compilation of the ENDF/B data within a reasonable time interval, members of the CSEWG decided to use already existing

compiled data as much as possible. In many cases, including those of the five materials assigned to Argonne, the existing compilations did not cover all types of data required or were sufficiently old that better experiments had later been performed, which could be used to improve the evaluations. The chief source of data for the evaluations of magnesium and titanium was the compilation by Tralli *et al.*⁴ of United Nuclear Corporation. The titanium data of Tralli *et al.* was later slightly modified at AWRE⁵ and is included in ENDF/A. The main data sources for molybdenum and gadolinium were the Karlsruhe evaluations by Schmidt⁶ and Schmidt and Siep,⁷ respectively. For vanadium, the present compilation is almost entirely new. The evaluations were done under a time limit, the target date being the November 1966 meeting of the CSEWG. The original versions of the data for all five materials were completed by that time. In the summer of 1967 the titanium and vanadium data were modified as suggested by the review committee of the CSEWG, to take account of later experimental data. It is hoped that the compiled data for the five Argonne materials are reasonably good, although the short time limit necessitated a compromise between performing the best possible evaluations and getting the data compiled in a reasonable time. Use of the data in reactor calculations should point out any serious shortcomings.

The following five sections describe the compilations for each of the materials.

II. MAGNESIUM

A. Outline of Data Included

Smooth total, elastic, inelastic, $(n,2n)$, (n,γ) , (n,p) , and (n,α) cross sections are given, along with the values of $\bar{\mu}_L$, ξ , and γ calculated from the Legendre coefficients mentioned below. Here $\bar{\mu}_L$ is the average cosine of the angle of elastic scattering in the laboratory system, ξ is the average logarithmic energy decrement in an elastic collision, and γ is the average of the square of the logarithmic energy decrement divided by twice the average logarithmic energy decrement. The energy range is 0.001 eV to 18 MeV.

Legendre coefficients in the center-of-mass system are presented for elastic scattering at 33 energies, along with the transformation matrix from the center-of-mass system to the laboratory system.

Secondary-energy distributions for inelastic scattering to four resolved levels and the continuum are given, along with tabulated nuclear temperatures. Nuclear temperatures for the $(n,2n)$ reaction are also included.

Parameters for the free-gas thermal-scattering law are given.

B. Sources of Magnesium Data

1. Total Cross Section

The total cross section over most of the energy range is based on Table 13 of UNC-5002,⁴ which gives data at 400 energies from 0.0383 eV to 18 MeV. An extension was made downward to 0.001 eV by summing the scattering and capture cross sections described below. From about 2.3 MeV to about 8.5 MeV, new values of σ_{nT} based on the more recent measurements presented in the figures on pages 12-0-3 and 12-0-4 of Ref. 8 were used.

2. Elastic Scattering Cross Section

The elastic scattering cross section over most of the energy range was taken from Table 13 of UNC-5002, a constant value of 3.41 barns being used below 1.5 eV. Since new total cross sections were used from 2.3 to 8.5 MeV, new elastic cross sections were determined in this range by subtracting other cross sections from the total.

3. Inelastic Scattering Cross Section

The inelastic scattering cross section is based on Table 13 of UNC-5002, the (n,n') and (n,np) cross sections being added to give the inelastic cross section at high energies.

4. (n,γ) Cross Section

The (n,γ) cross section is from Table 13 of UNC-5002, extended down to 0.001 eV on a $1/V$ basis with a cross section of 0.073 barn at 0.0253 eV.

5. $(n,2n)$, (n,p) , and (n,α) Cross Sections

Values of $\sigma_{n,2n}$, σ_{np} , and $\sigma_{n\alpha}$ are all from Table 13 of UNC-5002.

6. $\bar{\mu}_L$, ξ , and γ

A code was written using modified versions of some of the CHAD⁹ subroutines in order to calculate $\bar{\mu}_L$, ξ , and γ from Legendre coefficients. The CHAD code already had provision for calculation of $\bar{\mu}_L$ and ξ . The calculation of γ is done in a manner similar to that of ξ , presented in Section VII of Ref. 9. Since large terms tend to almost cancel one another in the calculation of γ , and to a lesser extent in the calculation of ξ , especially for heavy elements, the computations were done using double-precision arithmetic on the CDC-3600, which involves approximately 25 decimal digits.

7. Elastic Scattering Legendre Coefficients

Legendre coefficients in the center-of-mass system were obtained from Table 14 of UNC-5002, enough energies being chosen so that linear-log interpolation could reasonably be used between successive energies. Truncation of the series after too few terms at high energies in Table 14 leads to negative $d\sigma/d\Omega$ values over part of the angular range. Thus the coefficients at 9.89 MeV were slightly modified, and the coefficients at 14 and 18 MeV were derived from Abacus-2 optical-model calculations.^{10,11} The well parameters used in Abacus-2 were those of Bjorklund and Fernbach,¹² since the Legendre coefficients at high energies in Table 14 are based on their optical-model calculations. The angular distributions from the Abacus-2 problems were fit by least-squares techniques using the SAD code.¹³ The maximum number of Legendre coefficients used in the magnesium angular distributions is 10. Thus a transformation matrix from the center-of-mass system to the laboratory system involving terms through $\ell = 10$ was calculated using the CHAD code.

8. Secondary-energy Distributions

Probabilities of exciting each of the four resolved levels considered in inelastic scattering are tabulated from threshold up to 6.0 MeV, based on Table 15 of UNC-5002. A nuclear temperature for continuum inelastic scattering is given for higher energies. This was determined as follows. At several energies, nuclear temperatures were found for the Maxwellian distribution that would yield the same average energy loss as the tabulated values of $\sigma_{nn'}(E, E')$ in Table 16 of UNC-5002, which correspond to distributions that are decidedly non-Maxwellian. A smooth curve of temperature vs energy was drawn, guided by these calculated temperatures. This led to nuclear temperatures of the same order of magnitude as those given by the Yiftah-Okrent-Moldauer formulation¹⁴ over part of the range but which decreased drastically at high energies.

Nuclear temperatures for the $(n, 2n)$ reaction are given at threshold and at 18 MeV, determined as follows. In Ref. 5, one neutron was assumed to have an energy $E' = 0.3(E - E_{thr})$, and the other an energy $E' = 0.4(E - E_{thr})$, where E_{thr} is the threshold energy. Since the peak of a Maxwellian distribution occurs at $E' = \theta(E)$, the value of $\theta(E)$ at 18 MeV was taken as $0.35(E - E_{thr})$ MeV. At $E = E_{thr}$, an arbitrary value of 0.1 MeV was used rather than zero, since a zero value might cause difficulty in processing programs.

9. Thermal-neutron Scattering Law

A free-gas thermal-scattering law was assumed. The cutoff above which the static model is used was taken to be 1.5 eV, and a value of 3.41 barns was used for the free-atom scattering cross section.

C. Comments on Magnesium Cross Sections

The radiative capture cross section is quite uncertain, except at thermal and near-thermal energies. Even at thermal energy, the value of 0.073 barn used at 0.0253 eV is somewhat higher than the value of 0.063 ± 0.005 barn recommended in Ref. 8. Since the capture cross section is rather small, the errors are probably tolerable.

The inelastic scattering cross section is uncertain at high energies, although it should be reasonably good over most of the energy range.

The procedure used in UNC-5002 to obtain the (n,2n) cross section yields only a very rough estimate, but the high threshold of this reaction makes it of little importance for reactor calculations.

III. TITANIUM

A. Outline of Data Included

Smooth total, elastic, inelastic, (n,2n), (n, γ), (n,p), and (n, α) cross sections are presented along with values of $\bar{\mu}_L$, ξ , and γ calculated from the elastic scattering Legendre coefficients. The energy range covered is 0.001 eV to 18 MeV.

Elastic scattering Legendre coefficients are given in the center-of-mass system for 23 energies, along with the transformation matrix.

Inelastic scattering secondary-energy distributions for four resolved levels and the continuum are presented. Nuclear temperatures are tabulated for inelastic scattering and the (n,2n) reaction.

Free-gas thermal-scattering law parameters are included.

B. Sources of Titanium Data

1. Total Cross Section

Below 100 eV, the total cross section was obtained by adding the scattering and capture cross sections. From 100 eV to 2.5 keV, the UNC-5002 total cross section was used.⁴ From 2.5 to almost 220 keV, values of σ_{nT} were read from the graphs on pages 22-0-2, 22-0-3, and 22-0-4 of Ref. 15. The UNC-5002 values were used above 220 keV, except in the region 2.4-15 MeV, where values were read from the figures on page 22-0-5 of Ref. 15.

2. Elastic Scattering Cross Section

Below 100 eV, the elastic scattering cross section from UNC-5002 was used, except that a constant value of 4.13 barns was assumed below 1.5 eV. At all higher energies, σ_{nn} was obtained by subtracting all other cross sections from the total cross section.

3. (n, γ) Cross Section

A $1/V$ capture cross section of 6.1 barns at 0.0253 eV, as recommended in Ref. 15, was assumed up to 100 eV. From 100 eV to 22.5 keV, the capture cross section was calculated using the heavy-type resonance parameters in Ref. 15 in the single-level Breit-Wigner formula without Doppler broadening. An assumed Γ_γ of 0.75 eV was used, along with the $1/V$ contribution necessary to give $\sigma_{n\gamma} = 6.1$ barns at 0.0253 eV. The 4.18-keV resonance in Ti^{48} was omitted in these calculations, since its parameters do not agree with the total cross section curve. This resonance may belong to another titanium isotope. From 22.5 keV to almost 1 MeV, the capture cross section was read from the smooth curve on the figure on page 22-0-7 of Ref. 15. At higher energies, UNC-5002 values were used.

In the region of calculations from resonance parameters, the capture cross section is in general quite different from that in UNC-5002. This is because the UNC-5002 values are based on old resonance parameters, which have been greatly revised.

4. Inelastic Scattering, (n,2n), (n,p), and (n, α) Cross Sections

The values of σ_{nn} , $\sigma_{n,2n}$, σ_{np} , and $\sigma_{n\alpha}$ are all from Table 1 of UNC-5002.

5. $\bar{\mu}_L$, ξ , and γ

Values of $\bar{\mu}_L$, ξ , and γ were calculated from the elastic scattering Legendre coefficients, using the modified versions of the CHAD-code subroutines,⁹ as outlined in II.B.6 above in the documentation of magnesium cross sections.

6. Elastic Scattering Legendre Coefficients

Legendre coefficients in the center-of-mass system were obtained from Table 2 of UNC-5002. The same energies were used as in Ref. 5, except above 10 MeV. Since the coefficients of Table 2 yield negative $d\sigma/d\Omega$ values over part of the angular range at high energies, new coefficients were calculated at 14 and 18 MeV. These were derived from Abacus-2 calculations,^{10,11} using the well parameters of Bjorklund and Fernbach.¹² The angular distributions from the Abacus-2 problems were

fit by least-squares techniques, using the SAD code.¹³ A transformation matrix from the center-of-mass system to the laboratory system was calculated using CHAD.⁹ This matrix involves elements through $\ell = 12$, since 12 is the largest number of expansion coefficients used in the titanium angular distributions.

7. Secondary-energy Distributions

Probabilities of exciting each of the four resolved levels considered in inelastic scattering, based on Table 3 of UNC-5002, are tabulated from threshold to 4.44 MeV. A nuclear temperature for continuum inelastic scattering, determined as described above for magnesium, is tabulated for higher energies. The nuclear temperatures so determined do not differ nearly as much from those given by the formulation of Ref. 14 as was the case for magnesium.

Nuclear temperatures for the (n,2n) reaction were determined as for magnesium.

8. Thermal-neutron Scattering Law

A thermal-scattering law according to the free-gas model was assumed. The cutoff energy above which the static model is used was taken as 1.5 eV, and a value of 4.13 barns was used for the free-atom scattering cross section.

C. Comments on Titanium Cross Sections

The capture cross section is uncertain in the energy range in which it was calculated from resonance parameters, since there are no experimental data in that range and a value of Γ_γ had to be assumed. The (n, α) and (n,2n) cross sections are also questionable. The (n, α) cross section is too small to matter much in reactor calculations, while the high threshold of the (n,2n) reaction makes this reaction of little importance for reactors. Values of $\sigma_{n,2n}$ calculated by Pearlstein's method¹⁶ might have been better.

IV. VANADIUM

A. Outline of Data Included

Smooth total, elastic, inelastic, (n,2n), (n, γ), (n,p) and (n, α) cross sections are given, as well as values of $\bar{\mu}_L$, ξ , and γ derived from the Legendre coefficients. The energy range is 0.001 eV to 15 MeV.

Elastic scattering Legendre coefficients in the center-of-mass system are given for 42 energies, along with the transformation matrix.

Secondary-energy distributions for four resolved levels and the continuum for inelastic scattering are included, along with tabulated nuclear temperatures. Nuclear temperatures are also given for the (n,2n) reaction.

Parameters for the free-gas thermal-scattering law are given.

B. Sources of Vanadium Data

1. Total Cross Section

The total cross section below 100 eV is the sum of the scattering and capture cross sections. From 100 eV to about 2 keV, σ_{nT} was read from the graph in Ref. 17. From 2 to 220 keV, values were read from the graphs on pages 23-0-3 and 23-0-4 of Ref. 15. Values from Ref. 17 were then used up to about 0.4 MeV, followed by values from pages 23-0-5 and 23-0-6 of Ref. 15 at higher energies, except for the range 1.3-2.0 MeV in which data from Ref. 17 were used.

2. Elastic Scattering Cross Section

An elastic scattering cross section of 5 barns was used at tabulated energies below 100 eV. At all higher energies, σ_{nn} was obtained by subtracting the other cross sections from the total cross section.

3. (n, γ) Cross Section

Up to 1.5 eV, the capture cross section was taken as $1/V$, based on the recommended value¹⁵ of 5.06 barns at 0.0253 eV. From 1.5 eV to 22.5 keV, the capture cross section was calculated from parameters for the first two resonances in V^{50} and the first six resonances in V^{51} as given in Ref. 15, along with the $1/V$ contribution required to agree with the experimental cross section at 0.0253 eV. The single-level Breit-Wigner formula without Doppler broadening was used. Values of 0.60 and 0.75 eV were assumed for Γ_γ for the V^{50} and V^{51} resonances, respectively. These values were suggested by Kapchigashev¹⁸ to give agreement with his broad resolution measurements of capture cross section shown on page 23-0-3 of Ref. 15. From 22.5 keV to 2 MeV, the capture cross section was read from the smooth curve for V^{51} on page 23-51-5 of Ref. 15. At higher energies, a $1/E$ dependence for $\sigma_{n\gamma}$ was assumed.

4. Inelastic Scattering Cross Section

Inelastic scattering cross sections were calculated up to 2.4 MeV for scattering to four resolved levels in V^{51} using the Abacus-2^{10,11} and NEARREX¹⁹ optical model codes. The optical model parameters used are those of Eq. 8 of Ref. 20. The parameter Q in the NEARREX calculations was taken to be 1.0. Energies of the four resolved levels considered in

V^{51} are 0.320, 0.930, 1.609, and 1.813 MeV. The spins and parities of the ground state and the first four excited states were taken as $7/2^-$, $5/2^-$, $3/2^-$, $11/2^-$, and $9/2^-$, respectively.²¹ Since V^{50} has an abundance of only 0.24%, it was not considered in the inelastic scattering calculations. From 2.4 to 5.0 MeV, the inelastic scattering cross section was arbitrarily extrapolated using the assumption that compound elastic scattering vanished at 5 MeV. At higher energies, the other reaction cross sections were subtracted from the total optical model reaction cross section to yield $\sigma_{nn'}$.

Experimental data^{15,22} for inelastic scattering to the first four resolved levels, for an incident energy of 2.35 MeV only, are in good agreement with the calculations, as is shown in Table I. Calculations using $Q = 0.0$ rather than 1.0 in the NEARREX code did not agree quite as well with the experimental data.

TABLE I. Vanadium Inelastic Scattering at 2.35 MeV

Level, MeV	σ , mb	
	Experimental	Calculated
0.320	360 ± 30	369
0.930	160 ± 8	153
1.609	207 ± 10	207
1.813	145 ± 15	186

5. (n,2n) Cross Section

The (n,2n) cross section was calculated for V^{51} according to the method of Pearlstein¹⁶ and was

then increased by about 20% throughout the entire energy range in order to pass through a single experimental point.²³ In this calculation, no distinction was made between the laboratory and center-of-mass systems. This is in contrast to the calculations reported below for molybdenum and gadolinium in which the distinction between the systems was treated correctly.

6. (n,p) Cross Section

A smooth curve was drawn through the experimental V^{51} (n,p) Ti^{51} points given in Ref. 24. Since the experimental points were measured only at energies well above threshold, the curve was extrapolated downward to an assumed effective threshold of 3 MeV. This value was estimated by inspecting σ_{np} cross sections for other isotopes with Z values near that of vanadium and observing how far effective thresholds are above actual thresholds. The smooth curve on page 23-51-6 of Ref. 15 is almost in agreement with the σ_{np} values used here in the range above 13 MeV covered by the curve.

7. (n, α) Cross Section

The (n, α) cross section was read from the smooth curve on page 23-51-8 of Ref. 15 and extended downwards to an effective threshold of 7 MeV, estimated as for the (n,p) reaction.

8. $\bar{\mu}_L$, ξ , and γ

Values of $\bar{\mu}_L$, ξ , and γ were calculated from the elastic scattering Legendre coefficients, as outlined in II.B.6 above for magnesium.

9. Elastic Scattering Legendre Coefficients

Below 1.8 MeV, the Legendre coefficients are based on the experimental results of Langsdorf *et al.*,²⁵ who plot coefficients in the laboratory system as a function of energy. Values were read from these curves, renormalized as in ENDF/B, and transformed to the center-of-mass system using the transformation matrix routine from CHAD.⁹ Since these experimental results include inelastically scattered neutrons, corrections were made above the inelastic scattering threshold, assuming isotropic scattering in the center-of-mass system. The elastic scattering angular distributions of the Abacus-2 problems were fit at 1.8 MeV and above, using the least-squares fitting routine of SAD.¹³ From 2.6 through 4.0 MeV, the coefficients were adjusted using an estimated compound elastic scattering cross section, assumed isotropic in the center-of-mass system. At 5 MeV and above, it was assumed that compound elastic scattering is negligible. Since 12 Legendre coefficients are used at high energies, a transformation matrix from the center-of-mass system to the laboratory system including terms through $\ell = 12$ was calculated.

10. Secondary-energy Distributions

The probabilities of exciting each of the four resolved inelastic levels of the Abacus-2 and NEARREX calculations are tabulated from threshold to 2.4 MeV. Nuclear temperatures, calculated from the formulation of Ref. 14, are given at 2.4 and 15 MeV since the variation is linear on a log-log scale.

11. Thermal-neutron Scattering Law

A free-gas thermal-neutron scattering law was assumed. The cutoff above which the static model is used was taken to be 1.5 eV, and a free-atom scattering cross section of 5.0 barns was used.

C. Comments on Vanadium Cross Sections

The measurements of $\sigma_{n\gamma}$ by Kapchigashev¹⁸ have helped to reduce the uncertainty in the capture cross section in the resonance region. Experimental data^{15,22} on inelastic scattering are available only at 2.35 MeV, but the good agreement between these results and the optical-model calculations does give some confirmation of the validity of the calculations. There is uncertainty in the (n,p) and (n, α) cross sections at low energies since the data had to be extrapolated downward from higher energies, the

extrapolation covering a rather large energy range for the (n,p) cross section. No elastic angular-distribution measurements exist above 1.8 MeV. However, optical-model calculations of elastic angular distributions are generally rather reliable above a few MeV.

V. MOLYBDENUM

A. Outline of Data Included

Smooth total, elastic, inelastic, (n,2n), (n,3n), and (n, γ) cross sections are included, along with values of $\bar{\mu}_L$, ξ , and γ calculated from the Legendre coefficients. The energy range extends from 0.001 eV to 15 MeV.

Resolved resonance parameters for 32 resonances are given, the resonance calculations extending from 4 eV to 1 keV.

Legendre coefficients for elastic scattering are given in the center-of-mass system for 39 energies, along with the transformation matrix.

Secondary-energy distributions are given for inelastic scattering to four resolved levels and the continuum, along with tabulated nuclear temperatures. Nuclear temperatures for the (n,2n) and (n,3n) reactions are also included.

Thermal-scattering law parameters according to the free-gas model are given.

B. Sources of Molybdenum Data

1. Total Cross Section

Below 4 eV, the total cross section is the sum of the scattering and capture cross sections. From 4 eV to 1 keV, the total cross section is the sum of that calculated from resonance parameters and a smooth cross section that is entirely capture. Above 1 keV and up to 10 MeV, the KFK-120 data were used.⁶ From 10 to 15 MeV, σ_{nT} was read from the graph of Ref. 17.

2. Elastic Scattering Cross Section

Below 1.5 eV, a constant value of $\sigma_{nn} = 5$ barns, which is close to the tabulated values of Ref. 6, was used. At 4 eV and 1 keV, 5.008 and 5.780 barns were used, respectively, since these numbers correspond to those calculated from resonance parameters. Between 4 eV and 1 keV, σ_{nn} is calculated entirely from resonance parameters. From 1 to 200 keV, the values of Ref. 6 were used. Above 200 keV, σ_{nn} was found by subtracting other cross sections from the total.

3. (n, γ) Cross Section

Over most of the energy range, the capture cross section was taken from Ref. 6, with linear extrapolation on a log-log scale from 10^{-2} to 10^{-3} eV and from 10 to 15 MeV. Between 4 eV and 1 keV, $\sigma_{n\gamma}$ is calculated from resonance parameters, a smooth contribution being added to yield about the same $\sigma_{n\gamma}$ as in Ref. 6 between resonances.

4. Inelastic Scattering Cross Section

From 200 keV to 1.5 MeV, the inelastic scattering cross section was derived by summing values read from smooth curves drawn through experimental points for the excitation of four levels given in Ref. 26. A smooth curve was drawn from the value so determined at 1.5 MeV to meet the 2-MeV value of Ref. 6. From 2 to 10 MeV, the values from Ref. 6 were used, except that $\sigma_{n,2n}$ and $\sigma_{n,3n}$ were subtracted from these values above their thresholds. Above 10 MeV, the total reaction cross section was assumed constant, and $\sigma_{n,2n}$, $\sigma_{n,3n}$, and $\sigma_{n\gamma}$ were subtracted from the reaction cross section to yield $\sigma_{nn'}$.

5. (n,2n) and (n,3n) Cross Sections

Both the (n,2n) and (n,3n) cross sections were calculated by the methods of Pearlstein.

6. $\bar{\mu}_L$, ξ , and γ

The values of $\bar{\mu}_L$, ξ , and γ were computed from the elastic scattering Legendre coefficients, as described in II.B.6 above for magnesium.

7. Resonance Parameters

Parameters for a total of 19 $\ell = 0$ resonances and 13 $\ell = 1$ resonances in six of the molybdenum isotopes are included. These are based on experimental data for separated molybdenum isotopes.²⁷ There are more resonances than are present in the same energy range in Ref. 6, but the cross-section contributions from most $\ell = 1$ resonances are small.

8. Elastic Scattering Legendre Coefficients

Legendre coefficients in the center-of-mass system, obtained from Alter,²⁸ were used up to 6 MeV. Coefficients were computed at five energies above 6 MeV by performing Abacus-2 calculations,^{10,11} using the well parameters of Moldauer,²⁰ and fitting the shape-elastic angular distributions using the least-squares techniques of SAD.¹³ A transformation

matrix from the center-of-mass system to the laboratory system was calculated using CHAD.⁹ The matrix involves elements through $\ell = 16$, since 16 coefficients are given for the high-energy Legendre expansions.

9. Secondary-energy Distributions

Probabilities of exciting the four resolved levels by inelastic scattering²⁶ are tabulated from threshold to 1.5 MeV. Actually the top two of the four levels are combinations of levels with nearly the same energies. Nuclear temperatures, calculated as in Ref. 14, are given at 1.5 and 15 MeV.

Nuclear temperatures for the (n,2n) and (n,3n) reactions are given. The (n,2n) temperatures were determined as described for magnesium; the (n,3n) temperatures were found in a similar manner, assuming $E' = 0.2(E - E_{thr})$ rather than $0.35(E - E_{thr})$.

10. Thermal-neutron Scattering Law

A free-gas thermal-neutron scattering law was assumed. The cutoff above which the static model is used was taken to be 1.5 eV, and a free-atom scattering cross section of 5.0 barns was used.

C. Comments on Molybdenum Cross Sections

The revision²⁹ of the Karlsruhe evaluation of molybdenum provides a good source of data with which to compare the present evaluation. This revision was not available when the ENDF/B compilation was made. As in the present evaluation, Schmidt²⁹ recommends the use of resolved resonance parameters up to only 1 keV on the grounds that resonances are being missed experimentally at higher energies. The recommended resonance parameters in Table Mo-R4 of Ref. 29 differ from the ones in ENDF/B mainly by having smaller values of Γ_γ . Schmidt's resonance parameters give a non-1/V contribution of 22.5 barns²⁹ for the molybdenum capture resonance integral up to 1 keV. The ENDF/B parameters yield 24.5 barns for the same quantity. As Schmidt points out, the discrepancies between various measured resonance integrals are so large that the measurements do not help much in evaluating the compiled resonance parameters.

Schmidt²⁹ has revised the smooth capture cross sections in the energy range above 1 keV. Essentially, he has used the results of Kapchigashev³⁰ up to 50 keV and those of Staviskii and Shapar³¹ above 50 keV. These data^{30,31} are shown on pages 42-0-6 and 42-0-16 of Ref. 32. Figure Mo-C6 of Ref. 29 compares Schmidt's new evaluation and his old evaluation, which is used in ENDF/B. The most significant difference is in the energy range below 10 or 15 keV, where Schmidt's new values are considerably lower than the old ones.

It therefore appears from the preceding discussion that the capture cross section used in ENDF/B is probably somewhat high over most of the energy range above thermal.

Newer data on total cross section are available which show considerably more structure in the energy range above 1 keV than do the values used in ENDF/B. Schmidt's re-evaluation²⁹ shows more structure in the kilovolt energy range than does his original evaluation.⁶ The data of Wynchank et al. from Columbia, which were not available at the time of Schmidt's re-evaluation, have the best resolution and extend up to 66 keV. These data are plotted on pages 42-0-6 through 42-0-9 of Ref. 32.

Neither (n,p) nor (n, α) data were included in the ENDF/B molybdenum compilation. This was because data were available only for some of the isotopes, either at only one energy around 14 MeV or averaged over a fission spectrum. The (n, α) data are especially skimpy, and $\sigma_{n\alpha}$ is also quite small because of the large Coulomb barrier. Schmidt has included an (n,p) cross section for molybdenum in his re-evaluation.²⁹ This (n,p) cross section was assumed equal to that of Zr⁹⁰.

VI. GADOLINIUM

A. Outline of Data Included

Smooth total, elastic, inelastic, (n,2n), (n,3n), and (n, γ) cross sections are included, as well as values of $\bar{\mu}_L$, ξ , and γ computed from the Legendre coefficients. The energy range covered extends from 0.001 eV to 15 MeV.

Resolved resonance parameters for 24 resonances in Gd¹⁵⁵ and 5 resonances in Gd¹⁵⁷ are included.

Legendre coefficients for elastic scattering in the center-of-mass system are given for 32 energies, along with the transformation matrix.

Nuclear temperatures are given for inelastic scattering and for the (n,2n) and (n,3n) reactions. No resolved levels were considered for inelastic scattering.

Free-gas thermal-neutron scattering law parameters are included.

B. Sources of Gadolinium Data

1. Total Cross Section

Up to 50 eV, the total cross section is calculated from resonance parameters. From 50 eV to 10 keV, σ_{nT} was read from the BNL-325

graphs.¹⁷ From 10 keV to 10 MeV, values were obtained from KFK-352.⁷ The total cross section was extended from 10 to 15 MeV using the sparse data of Ref. 17 as a guide.

2. Elastic Scattering Cross Section

Below 50 eV, the elastic scattering cross section is calculated from the resonance parameters. From 50 eV to 10 keV, σ_{nT} was split into scattering and capture components using a computer program based on Eqs. 39, 40, 43, and 44 of KFK-352. Equations 39 and 40 are expressions for the average scattering and capture cross sections for $\ell = 0$ neutrons in the unresolved resonance region for Gd^{155} . The parameters used in these equations were determined by averaging the known resonance parameters. Since not enough resolved parameters are known to find average parameters for the other isotopes, Gd^{155} was assumed typical of natural gadolinium. Equations 43 and 44 merely use Eqs. 39 and 40 to split the experimental σ_{nT} into the scattering and capture components.

From 10 keV to 10 MeV, values of σ_{nn} were obtained from KFK-352. From 10 to 15 MeV, the reaction cross section was subtracted from the total cross section to give the elastic scattering cross section.

3. (n, γ) Cross Section

Below 50 eV, the (n, γ) cross section is calculated from resonance parameters. From 50 eV to 10 keV, $\sigma_{n\gamma}$ was determined as described above in the discussion of the elastic scattering cross section. Values from KFK-352 were used from 10 keV to 10 MeV, the extension of 15 MeV being made on the basis of linear extrapolation on a log-log scale.

4. Inelastic Scattering Cross Section

The inelastic scattering cross section was obtained up to the threshold of the (n,2n) reaction from KFK-352. From the (n,2n) threshold to 10 MeV, $\sigma_{n,2n}$ was subtracted from the $\sigma_{nn'}$ of KFK-352 to give the inelastic cross section. From 10 to 15 MeV, the reaction cross section of KFK-352 was extrapolated on a basis of a value at 15 MeV equal to 1.01 times the sum of $\sigma_{n,2n}$, $\sigma_{n,3n}$, and $\sigma_{n\gamma}$. Then $\sigma_{nn'}$ in this range was obtained by subtracting the other reactions from the total reaction cross section.

5. (n,2n) and (n,3n) Cross Sections

The (n,2n) and (n,3n) cross sections were both calculated by Pearlstein, according to the methods of Ref. 16.

6. $\bar{\mu}_L$, ξ , and γ

The values of $\bar{\mu}_L$, ξ , and γ were calculated from the Legendre coefficients, as described in II.B.6 above for magnesium.

7. Resonance Parameters

Resonance parameters are included for 24 s-wave resonances in Gd^{155} and 5 s-wave resonances in Gd^{157} . The parameters for the first three resonances in Gd^{155} and the first two in Gd^{157} are from Ref. 33. Parameters for the remaining resonances are from BNL-325.¹⁷

8. Elastic Scattering Legendre Coefficients

From 0.3 to 1.5 MeV, Legendre coefficients in the center-of-mass system, where were obtained from Alter,²⁸ were used. Below 0.3 MeV, coefficients were estimated from extrapolation of the Alter data, with isotropic scattering assumed below 5 keV. Above 1.5 MeV, coefficients were calculated at seven energies by performing Abacus-2 calculations^{10,11} and fitting the resulting shape elastic angular distributions using SAD.¹³ The parameters used in these optical model calculations were derived from approximations to Eq. 35 of Ref. 34, since the optical-model parameters used in KFK-352 were also obtained in this manner. This equation is used to obtain local parameters which are approximately equivalent to nonlocal ones. As in KFK-352, the parameters of Table 4 of Ref. 34 without the spin-orbit term were used for the nonlocal parameters.

The transformation matrix from the center-of-mass system to the laboratory system, calculated using CHAD,⁹ includes elements through $\ell = 19$ in agreement with the number of coefficients in the high-energy Legendre expansions.

9. Secondary-energy Distributions

Nuclear temperatures for inelastic scattering, calculated from the prescription of Ref. 14, are given at 60 keV and 15 MeV. Only continuum inelastic scattering was considered, both in this evaluation and in KFK-352, since there are many low-lying levels in the various gadolinium isotopes above the (n,n') threshold.

Nuclear temperatures are given for the (n,2n) and (n,3n) reactions. These were determined by the methods described in II.B.8 and V.B.9 under magnesium and molybdenum.

10. Thermal-neutron Scattering Law

The free-gas thermal-neutron scattering law has a cutoff of 1.5 eV, above which the static model is used, and a value of 8.0 barns for the free-atom scattering cross section. This 8-barn value is what is calculated from resonance parameters near 1.5 eV.

C. Comments on Gadolinium Cross Sections

The cross section of gadolinium in the thermal-energy range is the largest of any stable element. The resonance parameters of Ref. 33, which were used in this evaluation, give a very good fit to the gadolinium cross section at low energy.

Above 1 or 2 MeV, there is not a great deal of experimental data available for gadolinium. Thus optical-model calculations were used to a large extent at higher energies. The (n,2n) and (n,3n) cross sections are based entirely on calculations. No (n,p) and (n, α) cross sections are included in this compilation, but the Coulomb barrier is sufficiently high to make these cross sections quite small.

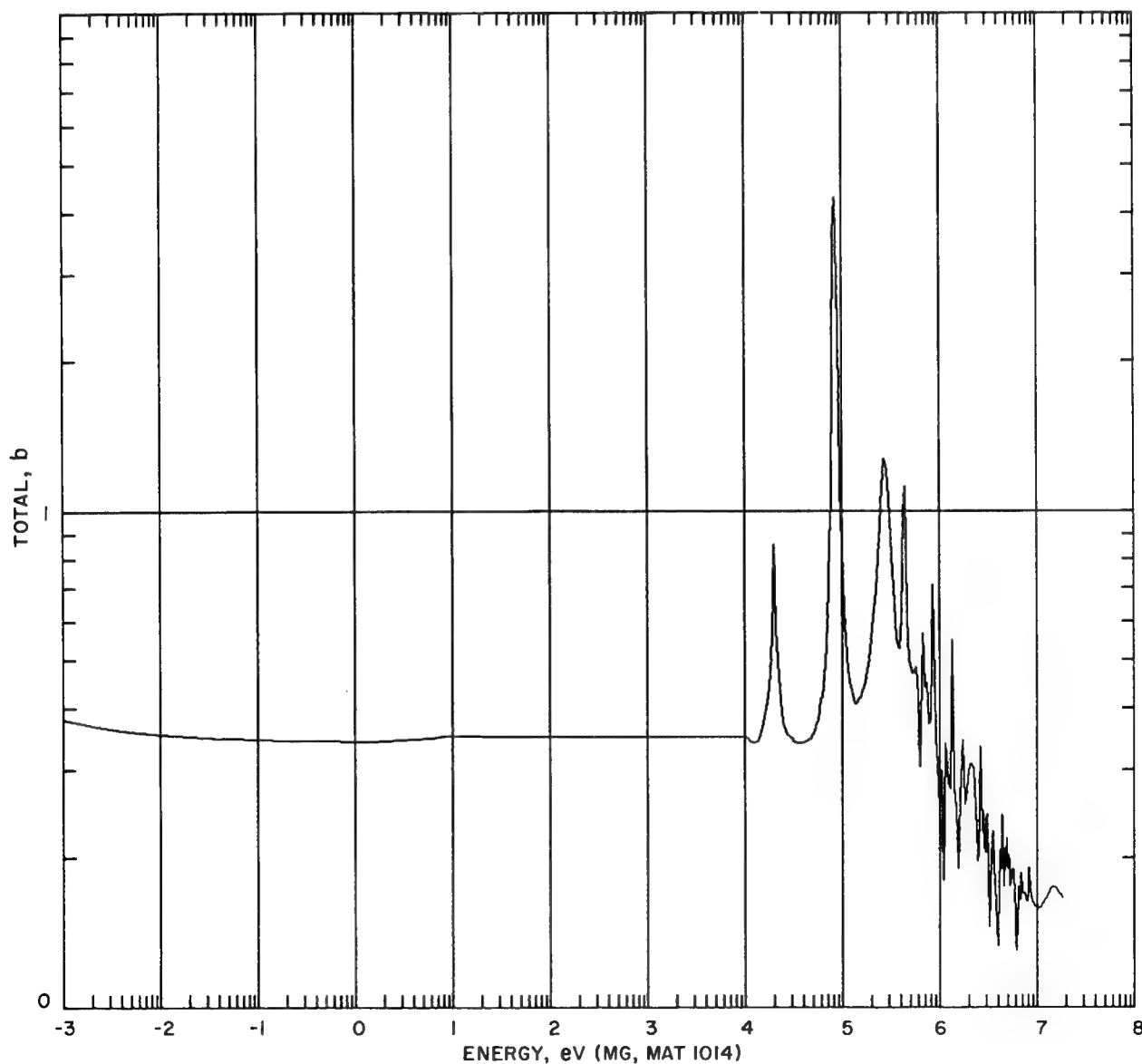
VII. GRAPHS

Graphs of much of the data are presented in Figs. 1-97. The axes, hash marks, and curves on these figures were drawn with the aid of the CDC-3600 computer and a CalComp 580 plotter. The integers appearing along some of the logarithmic axes are the powers of 10 corresponding to the points in question. The identification, MAT 1014, appearing on the magnesium graphs refers to the ENDF/B material number assigned to magnesium by the CSEWG. Likewise, the MAT numbers assigned to titanium, vanadium, molybdenum, and gadolinium are 1016, 1017, 1025, and 1030, respectively.

A. Smooth Cross Sections

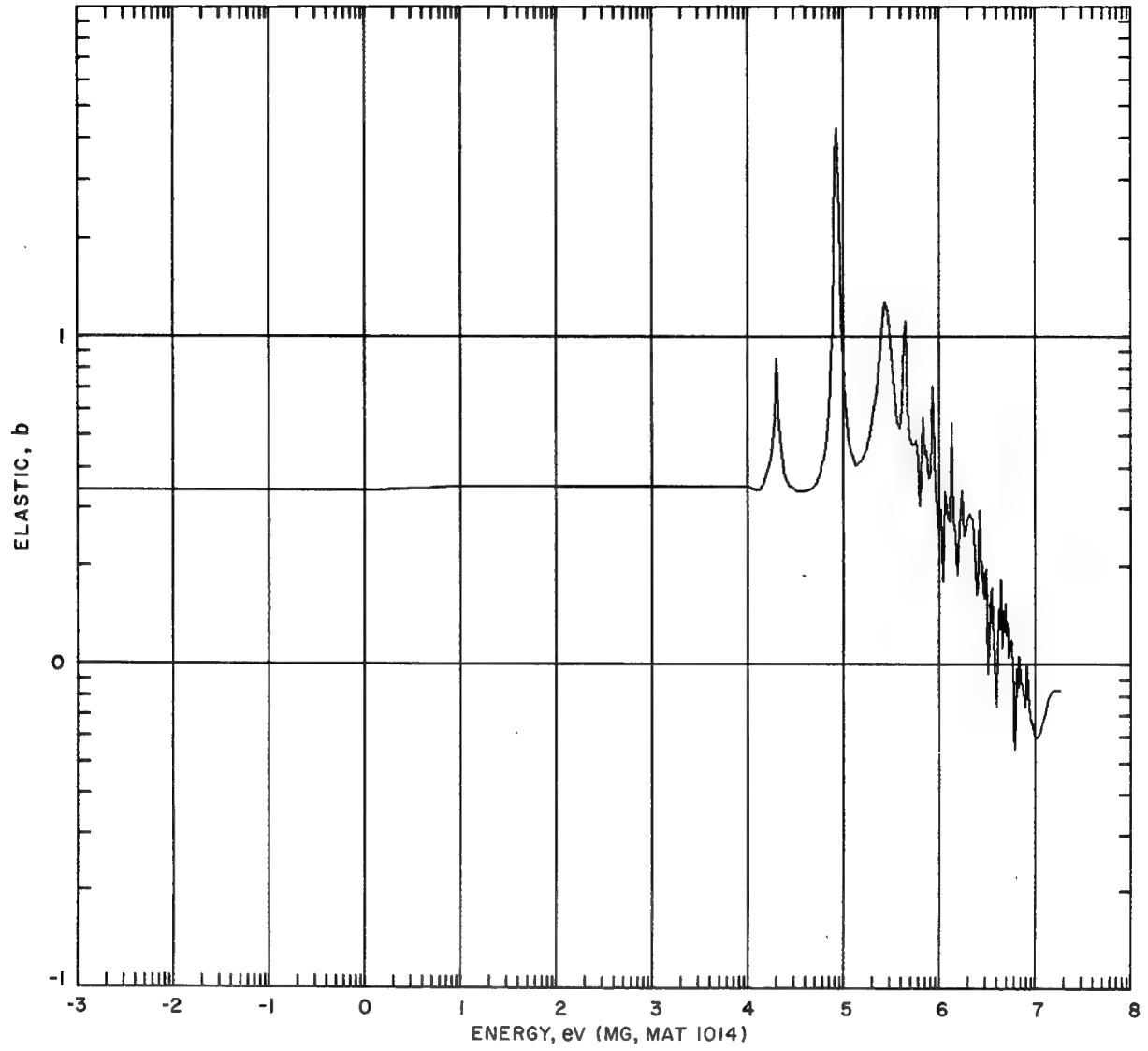
Smooth cross sections and other data plotted from ENDF/B File 3 (Ref. 3) are given for magnesium in Figs. 1-9, titanium in Figs. 10-19, vanadium in Figs. 20-29, molybdenum in Figs. 30-37, and gadolinium in Figs. 38-46. In ENDF/B, the term "smooth" refers to data that can be represented by a series of pairs of x and y values with an interpolation rule applying between successive pairs. The interpolation rule might specify, for example, that $\ln y$ is linear in $\ln x$ between successive (x, y) pairs. In Figs. 1-46 the axis types have been chosen to correspond to the interpolation rule. Thus logarithmic axes are used for both σ_T and E for magnesium in Fig. 1 because log-log interpolation is specified for this cross section. In some cases, such as that of inelastic scattering for

magnesium in Fig. 3, the first point of the curve has been omitted because it corresponds to a zero cross section with linear-linear interpolation specified between the first two points. The molybdenum total and capture cross sections in Figs. 30 and 34 represent the smooth contribution only. Thus the cross sections calculated from resonance parameters in the range 4-1000 eV must be added to these values to give the complete total and capture cross sections. The energy range below 1000 eV is not shown on the elastic scattering cross section for molybdenum in Fig. 31 since linear-linear interpolation is specified. No curves are shown for the total, elastic, and capture cross sections of gadolinium below 50 eV in Figs. 38, 39, and 43 because the cross sections are calculated entirely from resonance parameters in this energy range.



112-8781

Fig. 1. Magnesium Total Cross Section



112-8783

Fig. 2. Magnesium Elastic Scattering Cross Section

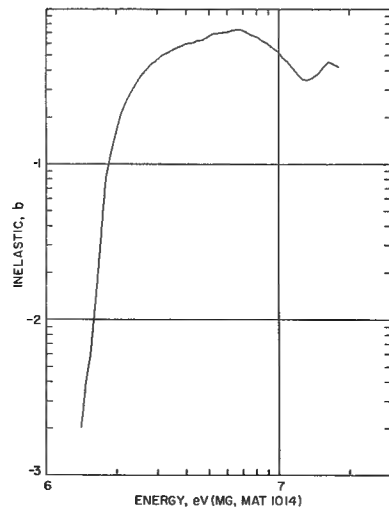
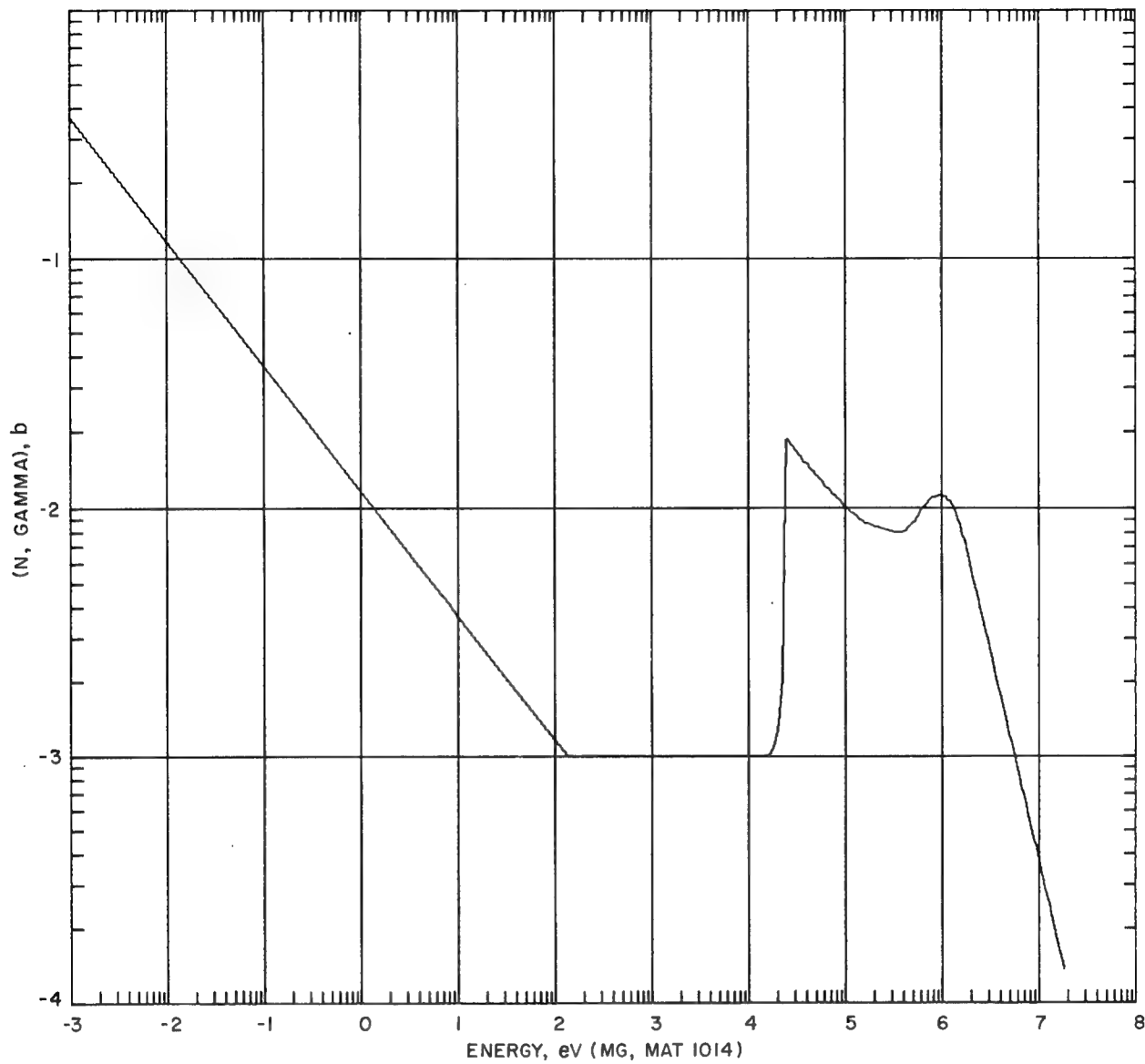


Fig. 3
Magnesium Inelastic Scattering
Cross Section

112-8762



112-8789

Fig. 4. Magnesium (n, γ) Cross Section

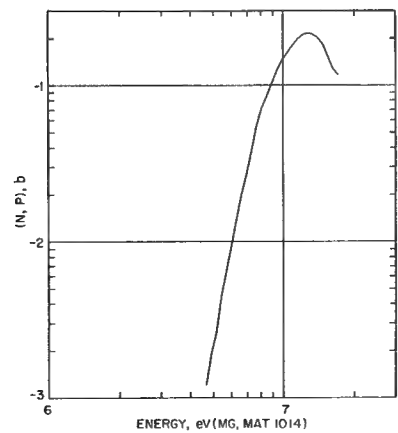


Fig. 5
Magnesium (n,p)
Cross Section

112-8768

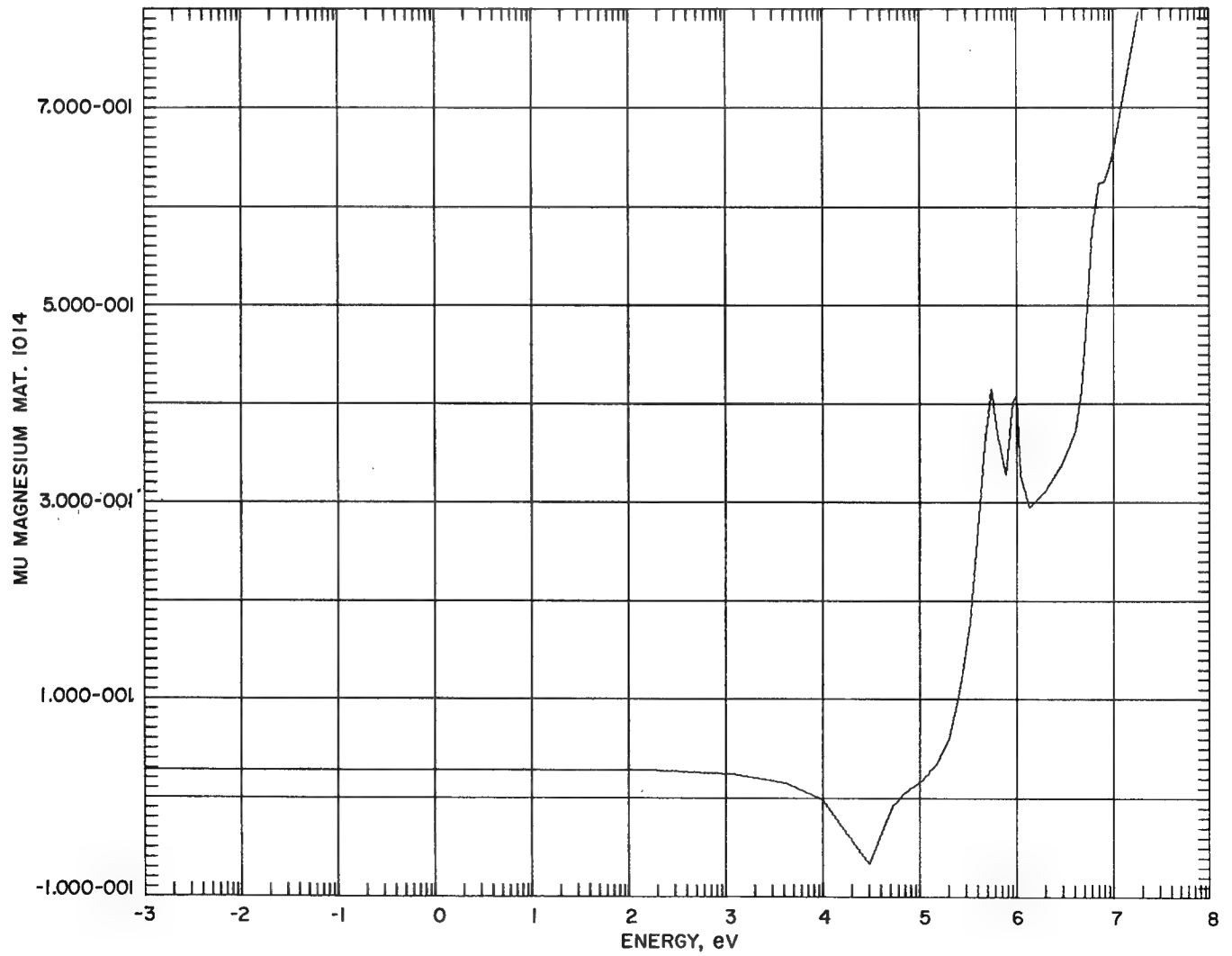
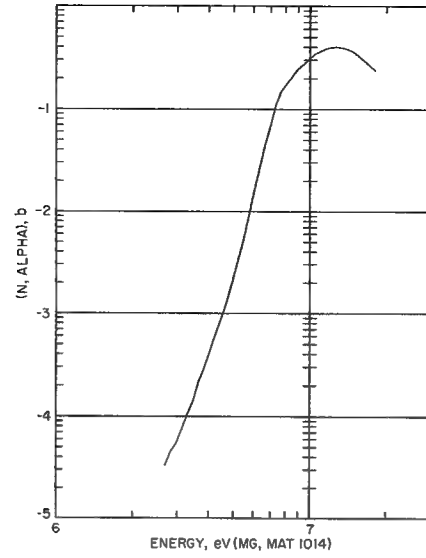
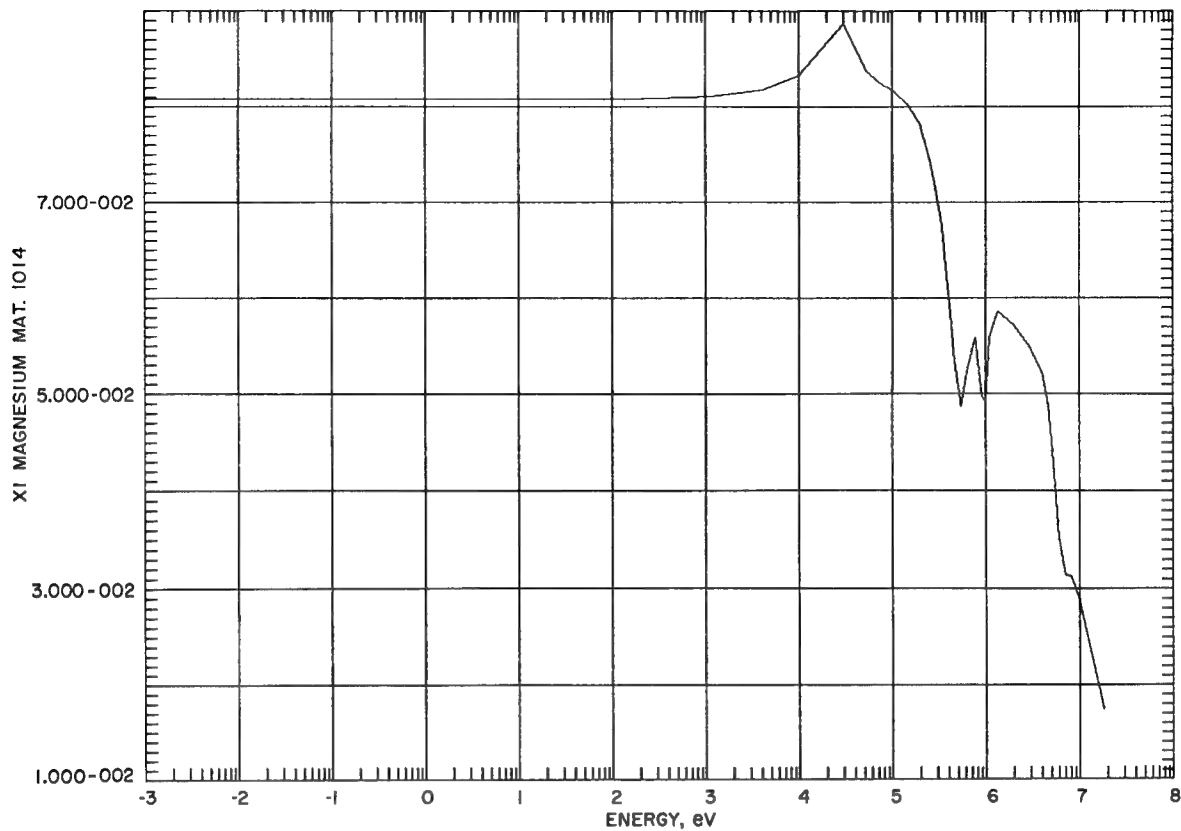
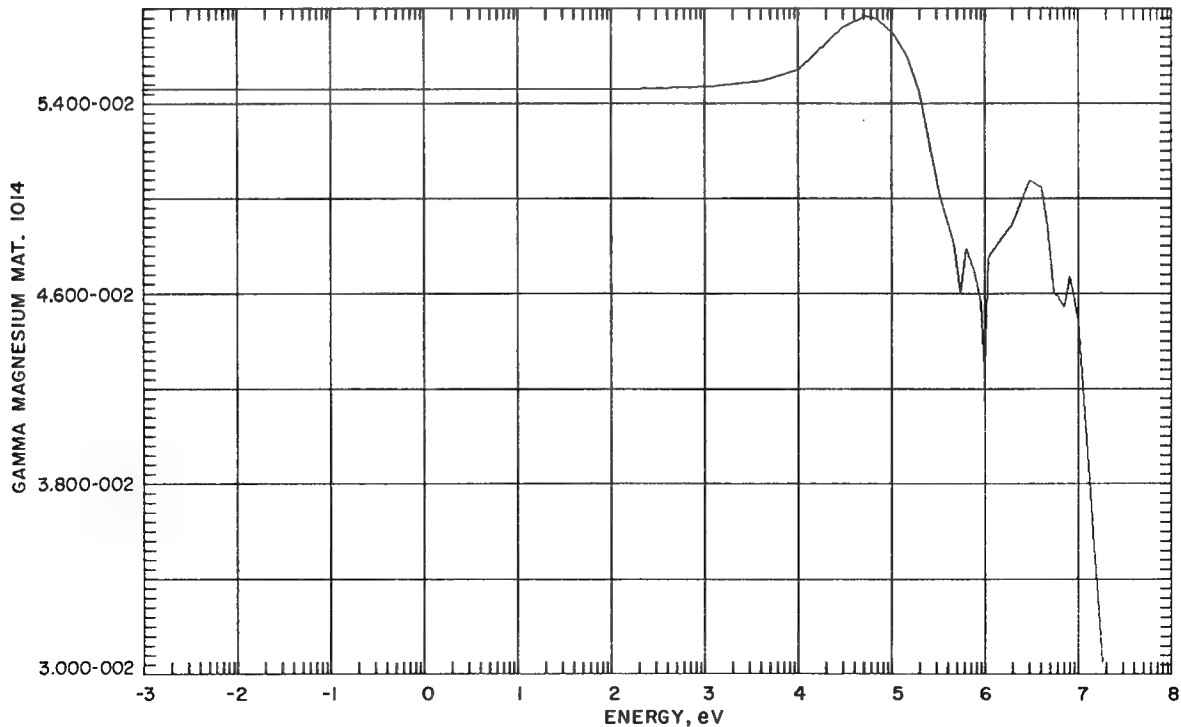


Fig. 7. Magnesium Average Elastic Scattering Cosine, $\bar{\mu}_L$



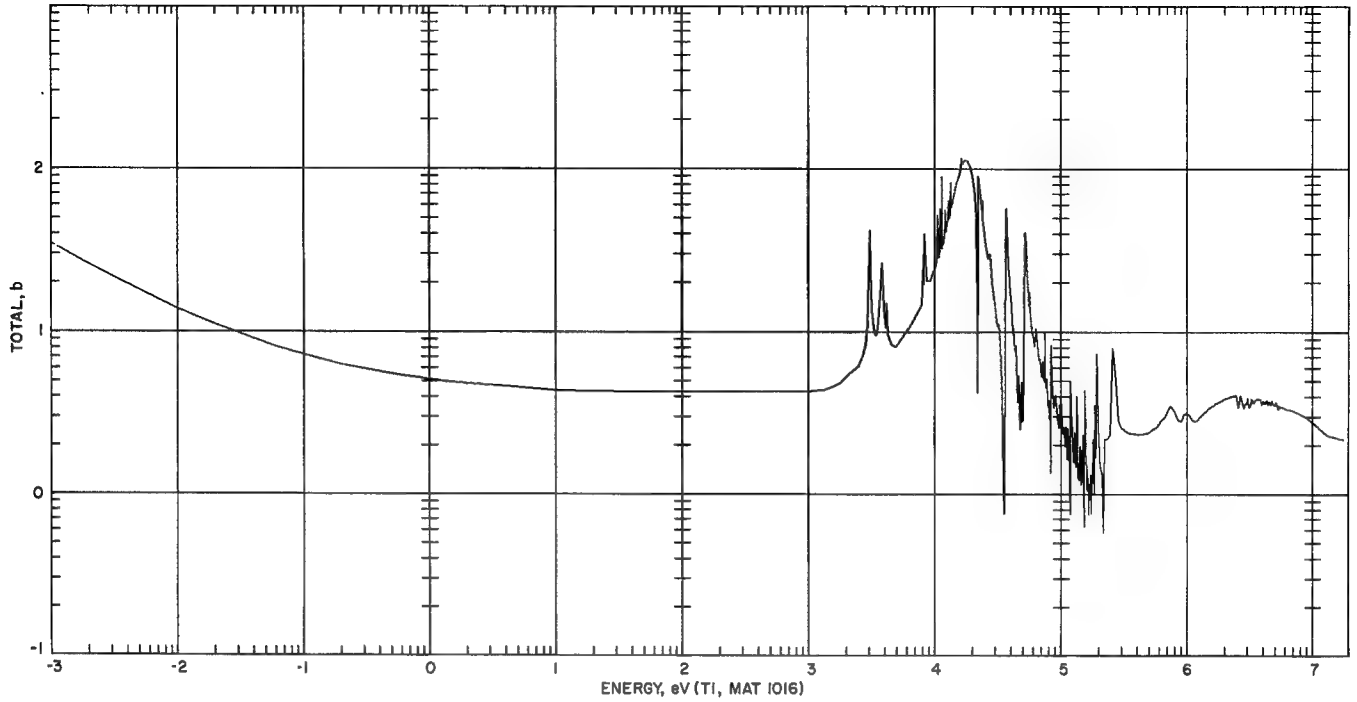
112-8779

Fig. 8. Magnesium Average Logarithmic Energy Decrement, ξ



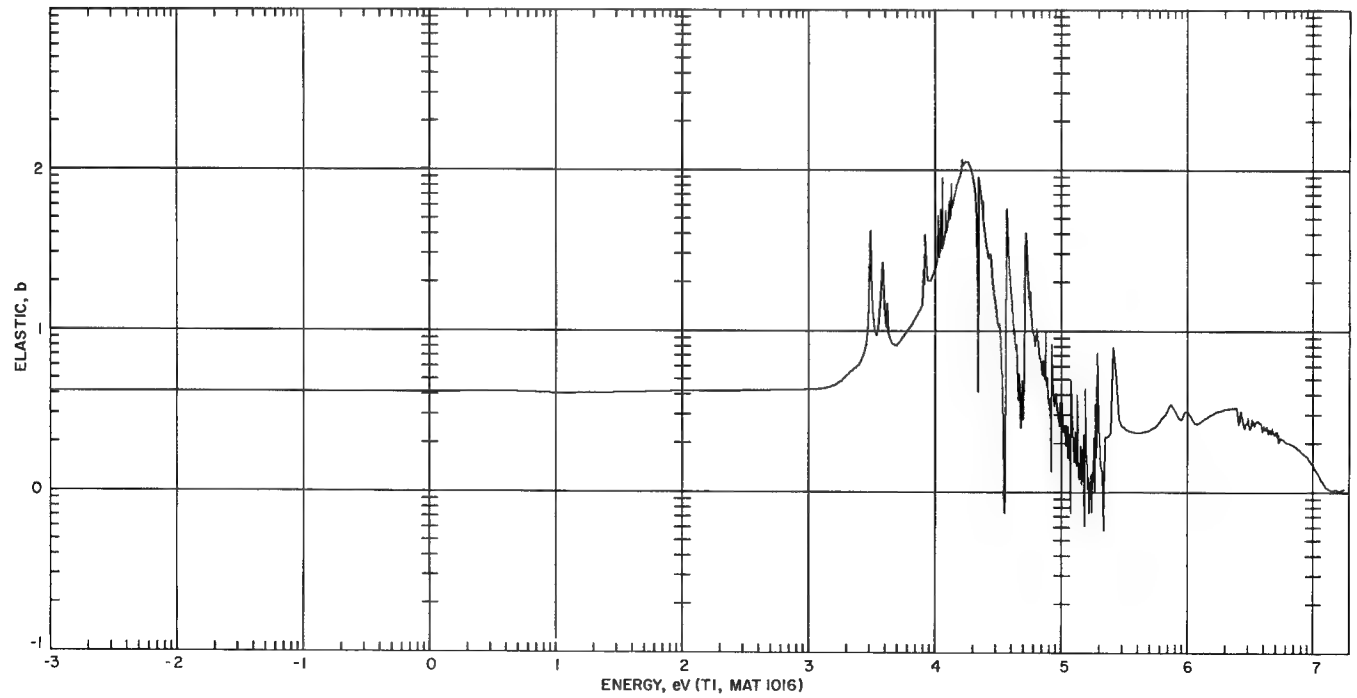
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Fig. 9. Magnesium γ



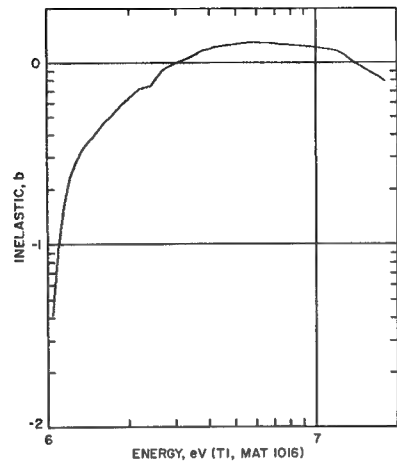
112-8784

Fig. 10. Titanium Total Cross Section

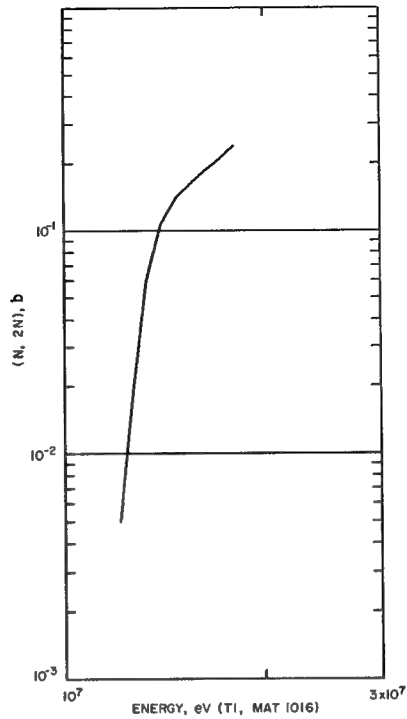


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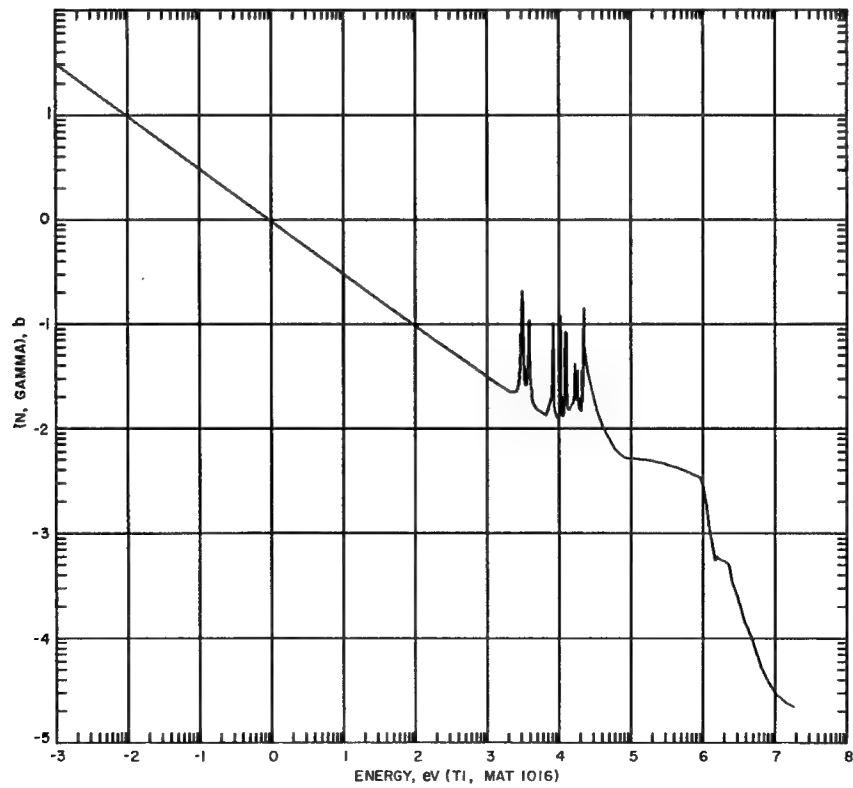
Fig. 11. Titanium Elastic Scattering Cross Section



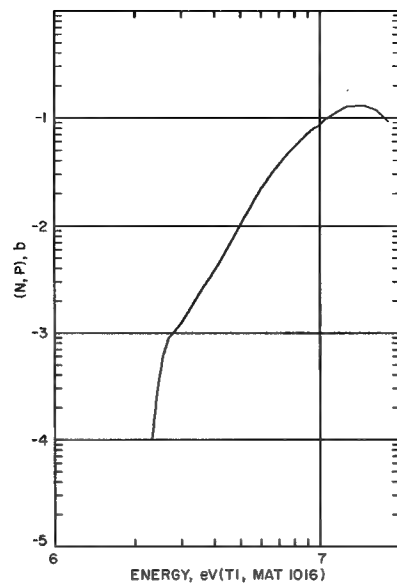
112-8758
Fig. 12. Titanium Inelastic
Scattering Cross Section



112-8760
Fig. 13. Titanium (n,2n) Cross
Section

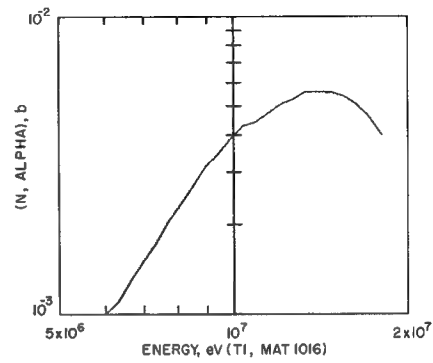


112-8778
Fig. 14. Titanium (n,γ) Cross Section



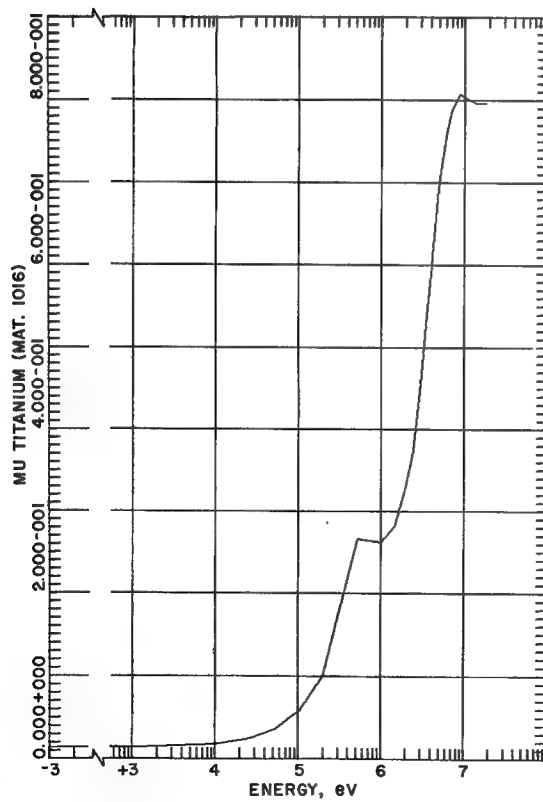
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Fig. 15. Titanium (n,p) Cross Section

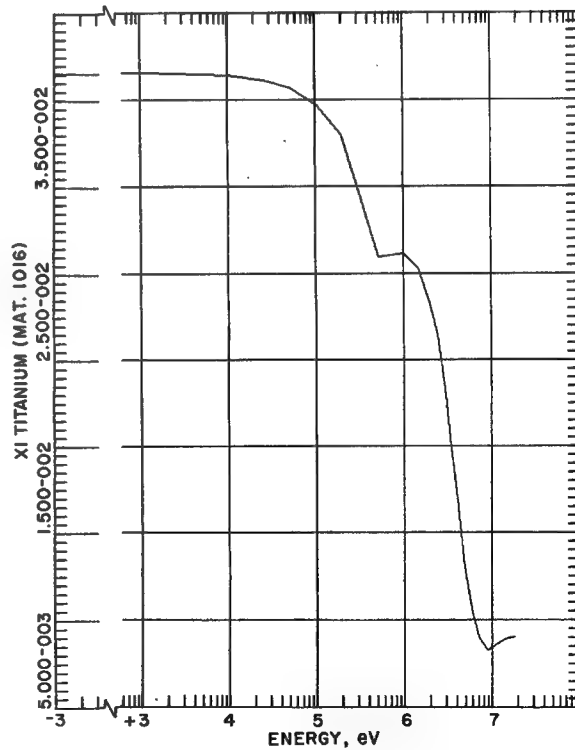


112-8767

Fig. 16. Titanium (n,α) Cross Section



112-9175

Fig. 17. Titanium Average Elastic Scattering Cosine, $\bar{\mu}_L$ 

112-9180

Fig. 18. Titanium Average Logarithmic Energy Decrement, ξ

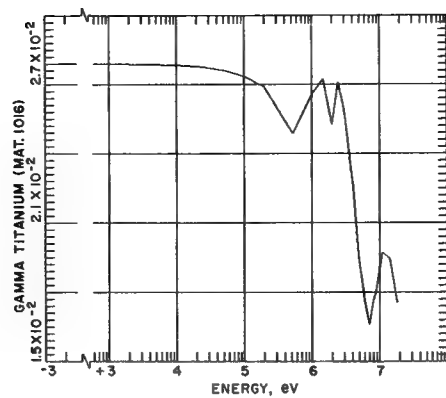
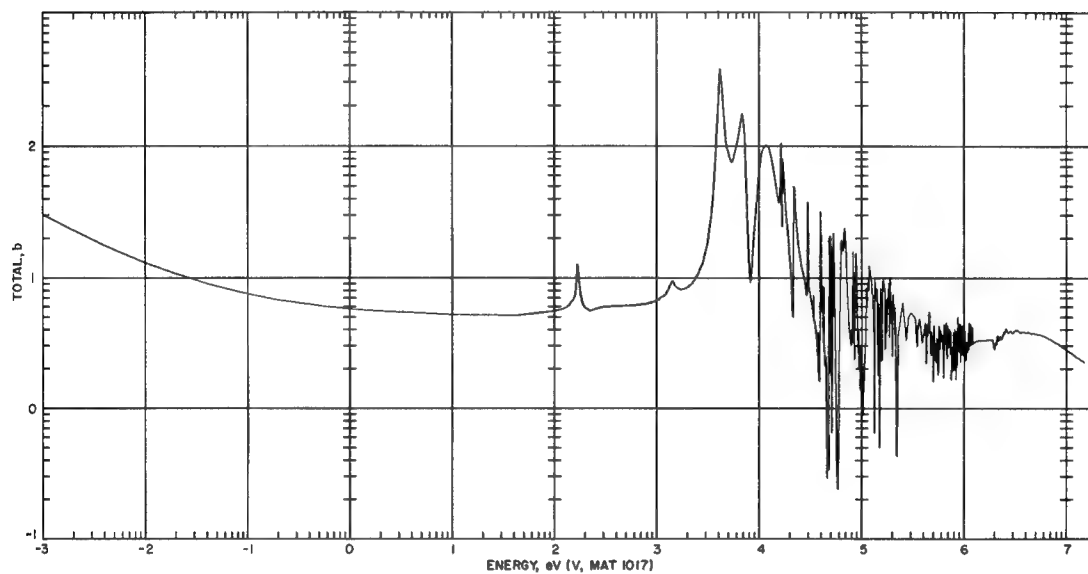


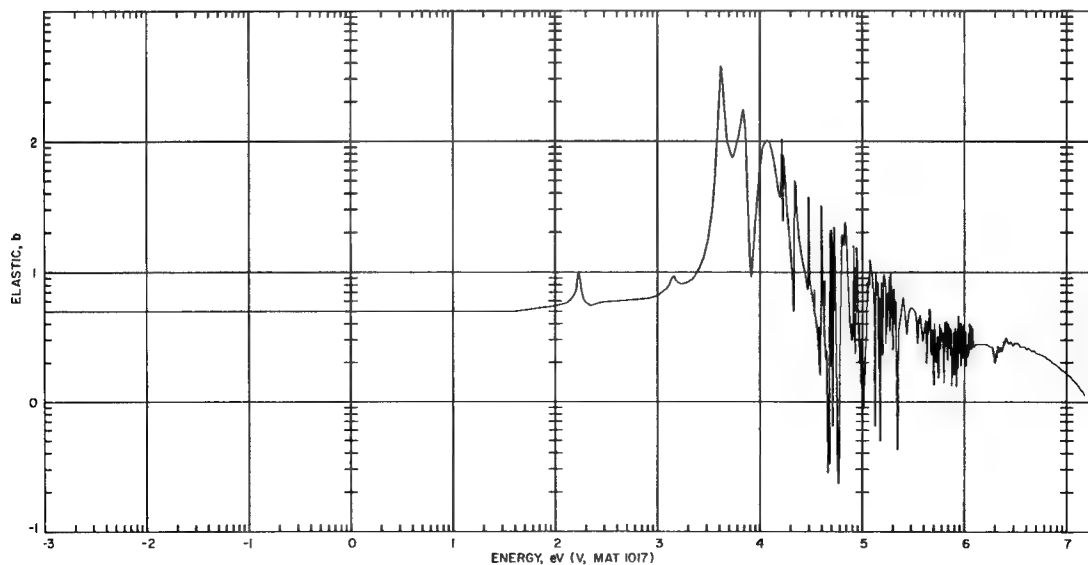
Fig. 19
Titanium γ

112-9174



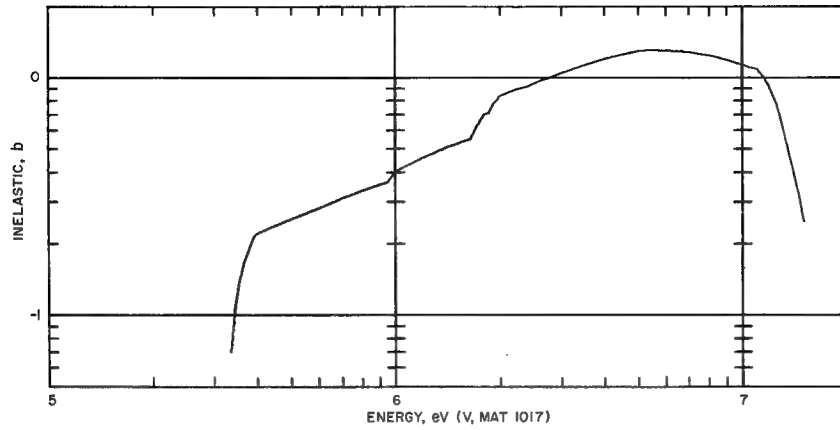
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Fig. 20. Vanadium Total Cross Section



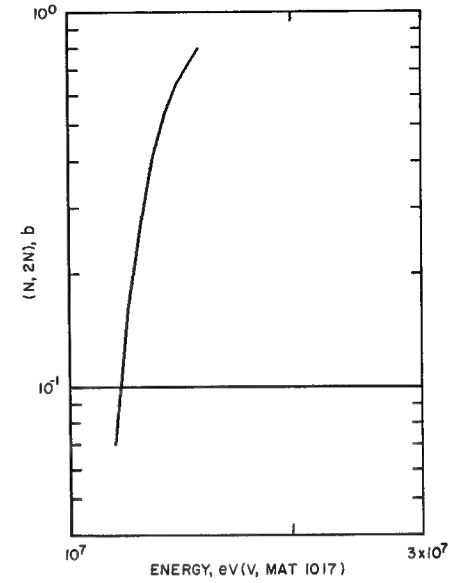
112-8786

Fig. 21. Vanadium Elastic Scattering Cross Section

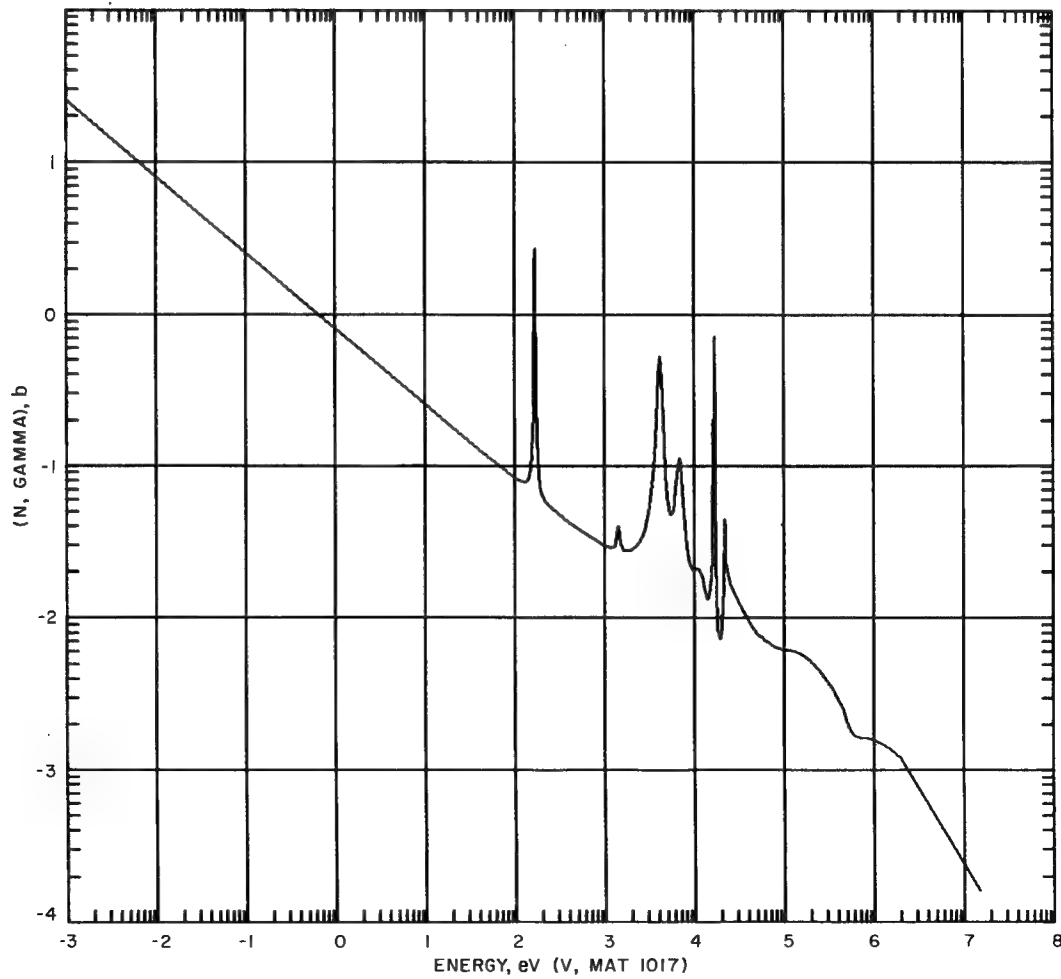


112-8756

Fig. 22. Vanadium Inelastic Scattering Cross Section

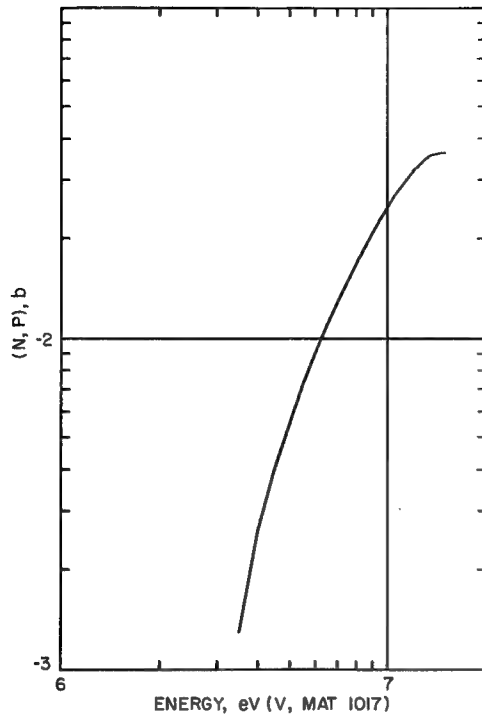


112-8764

Fig. 23. Vanadium (n,2n)
Cross Section

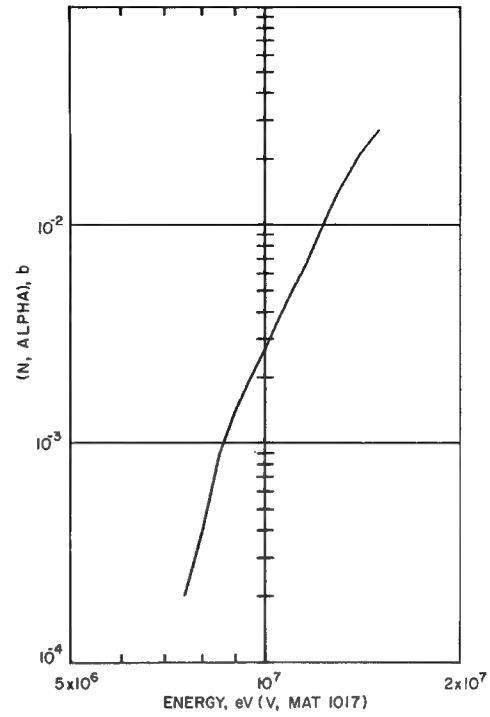
112-8787

Fig. 24. Vanadium (n,γ) Cross Section



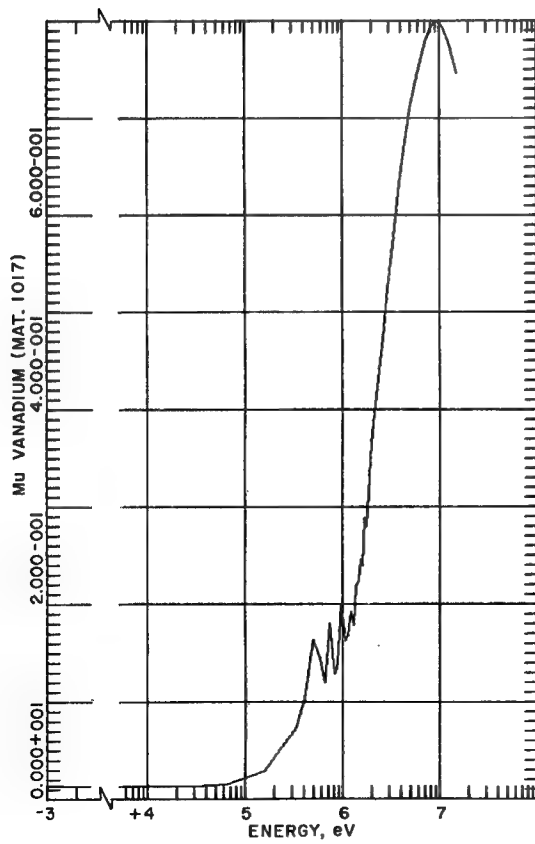
112-8761

Fig. 25. Vanadium (n,p) Cross Section

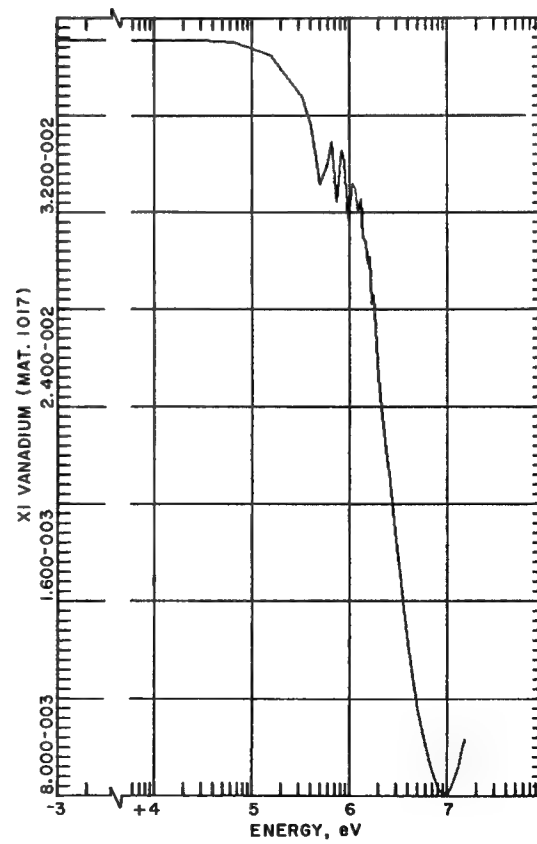


112-8755

Fig. 26. Vanadium (n,α) Cross Section



112-9176

Fig. 27. Vanadium Average Elastic Scattering Cosine, $\bar{\mu}_L$ 

112-9177

Fig. 28. Vanadium Average Logarithmic Energy Decrement, ξ

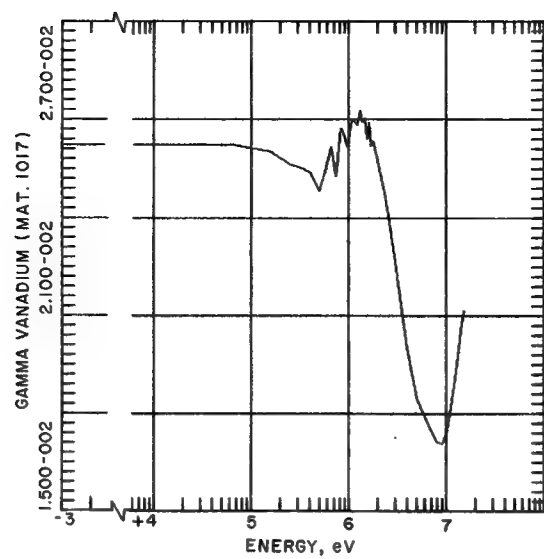
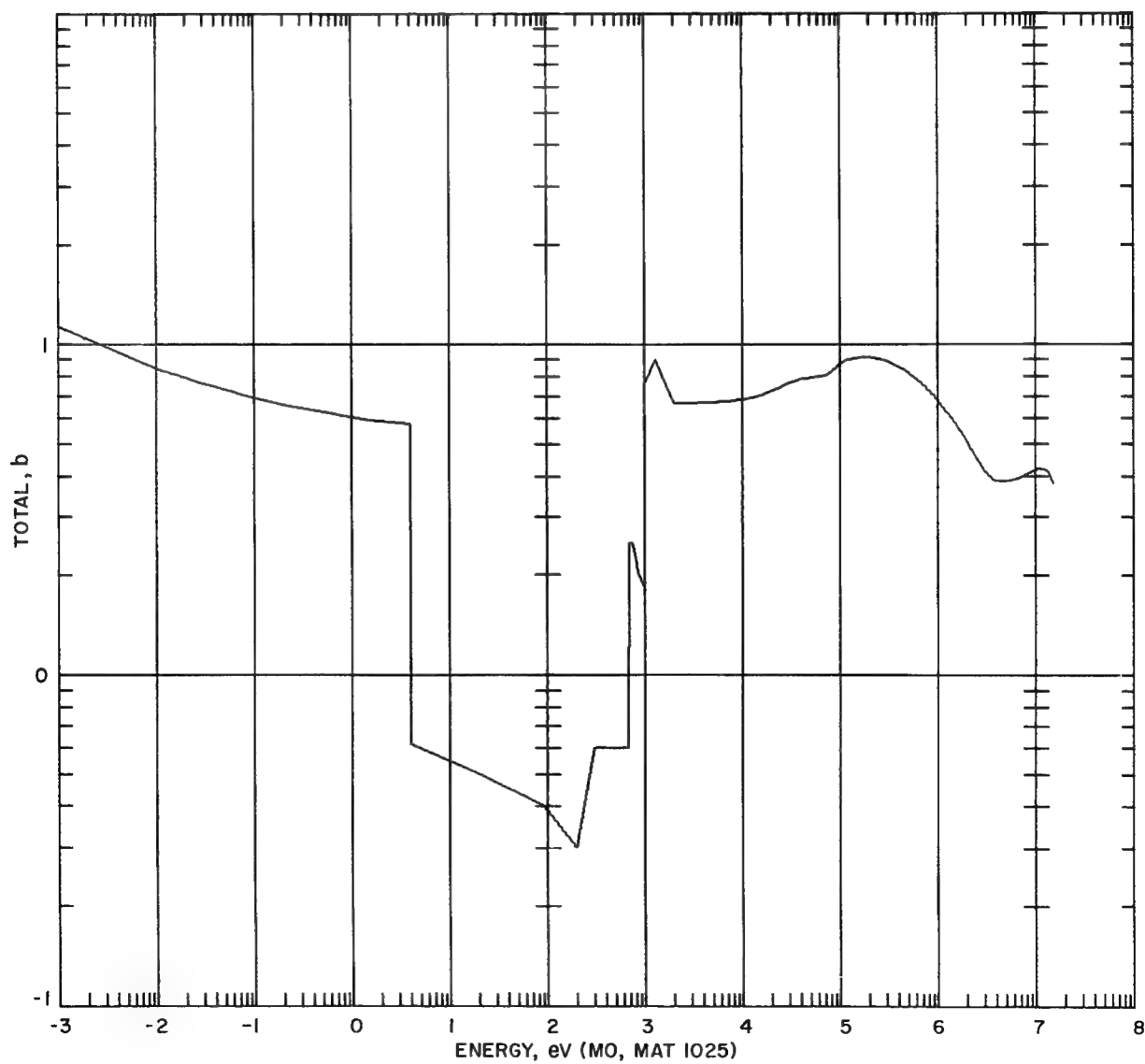


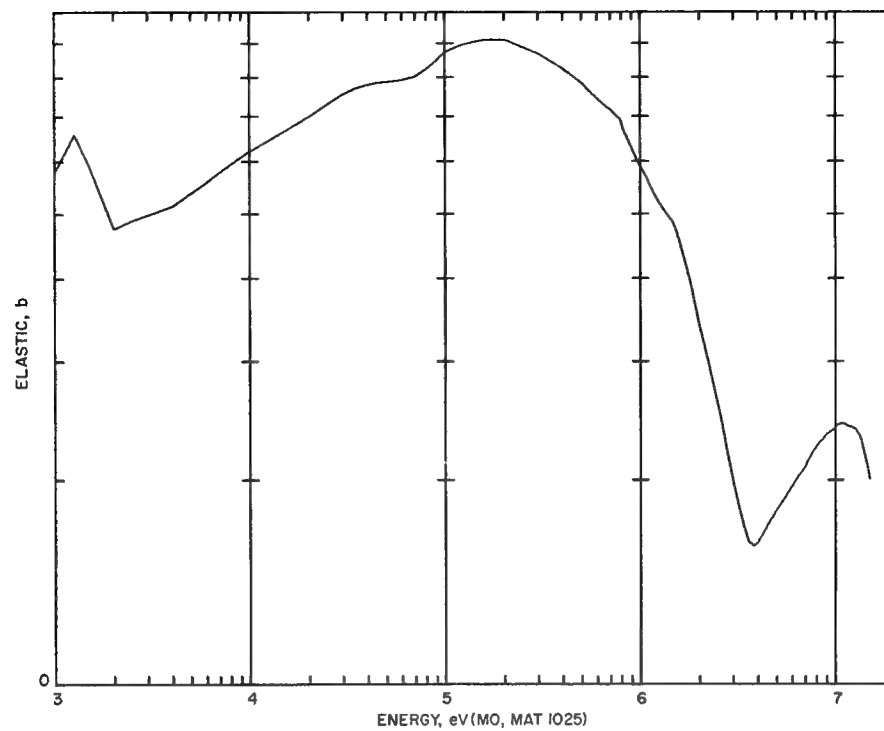
Fig. 29
Vanadium γ

112-9173



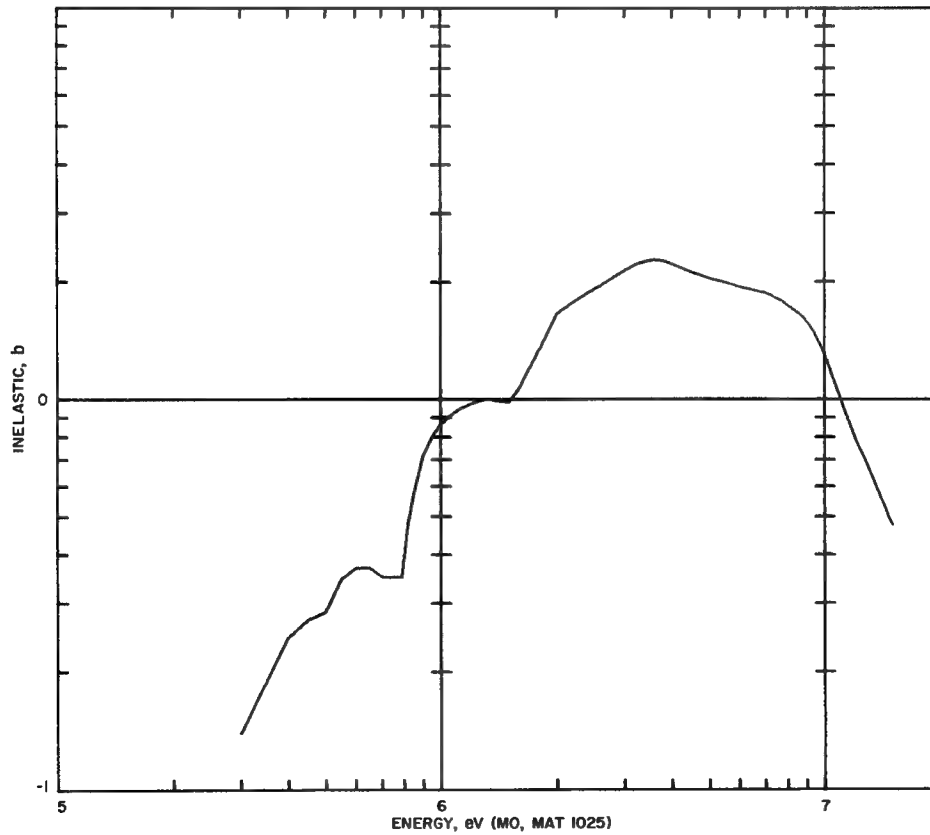
112-8774

Fig. 30. Molybdenum Smooth Total Cross Section



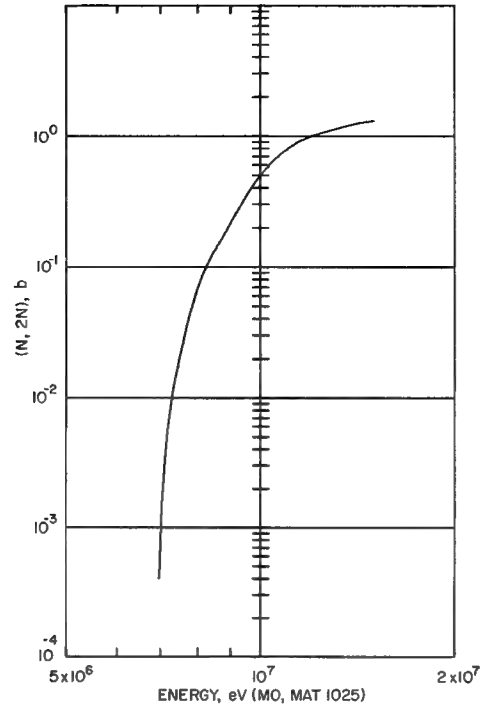
112-8782

Fig. 31. Molybdenum Smooth Elastic Scattering Cross Section

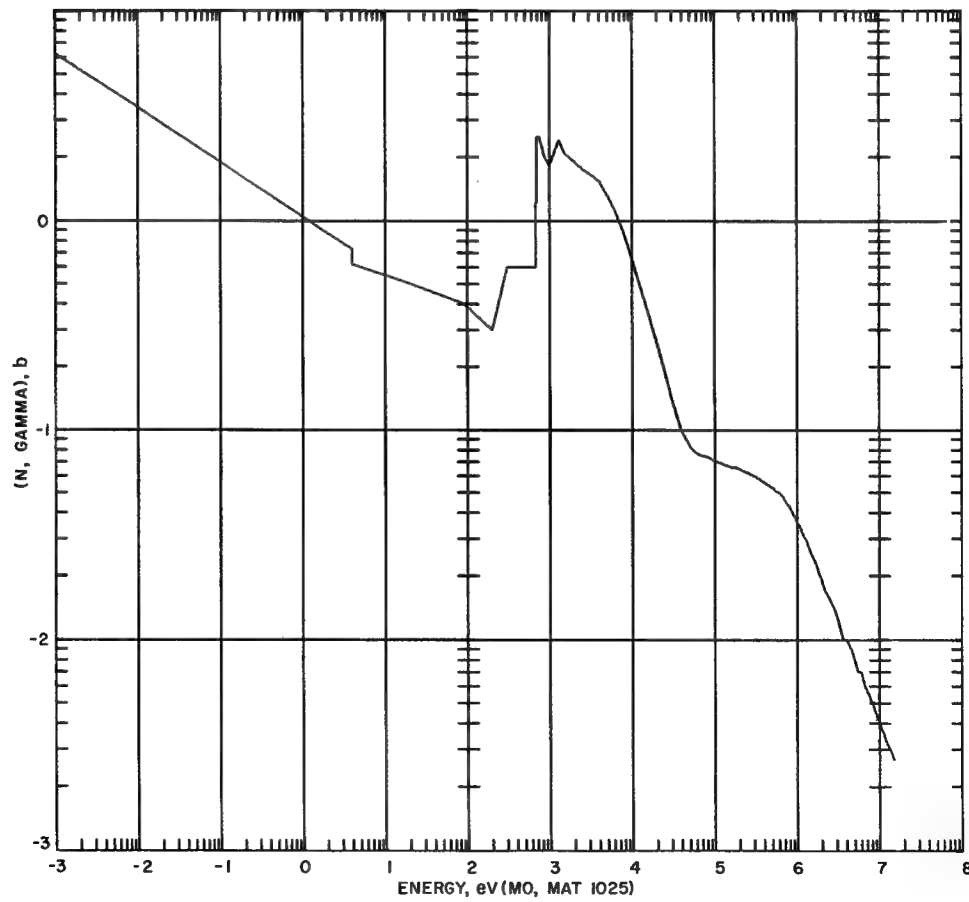


112-8769

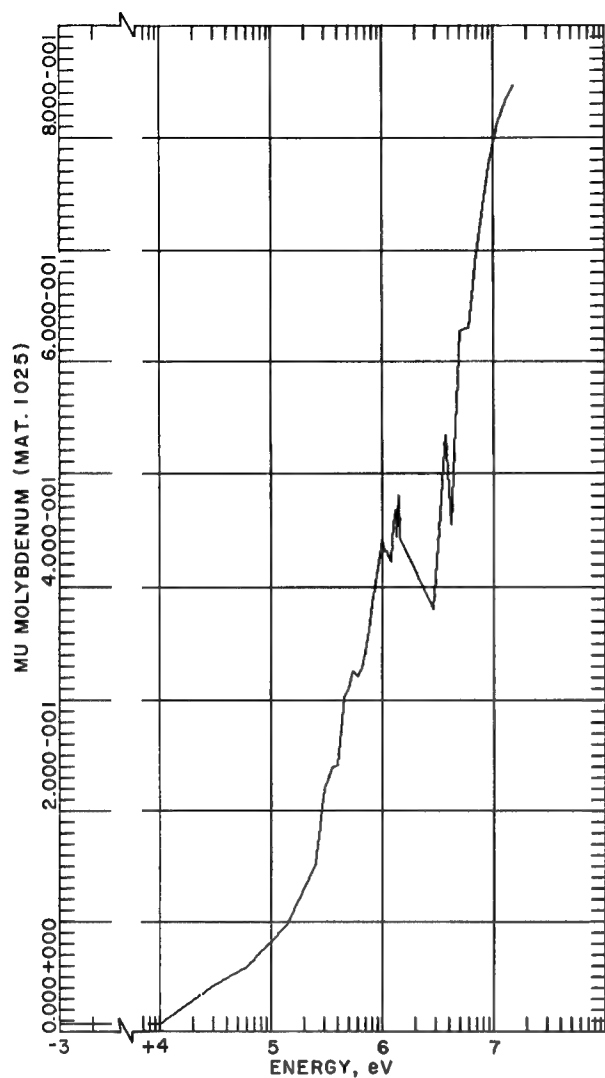
Fig. 32. Molybdenum Inelastic Scattering Cross Section



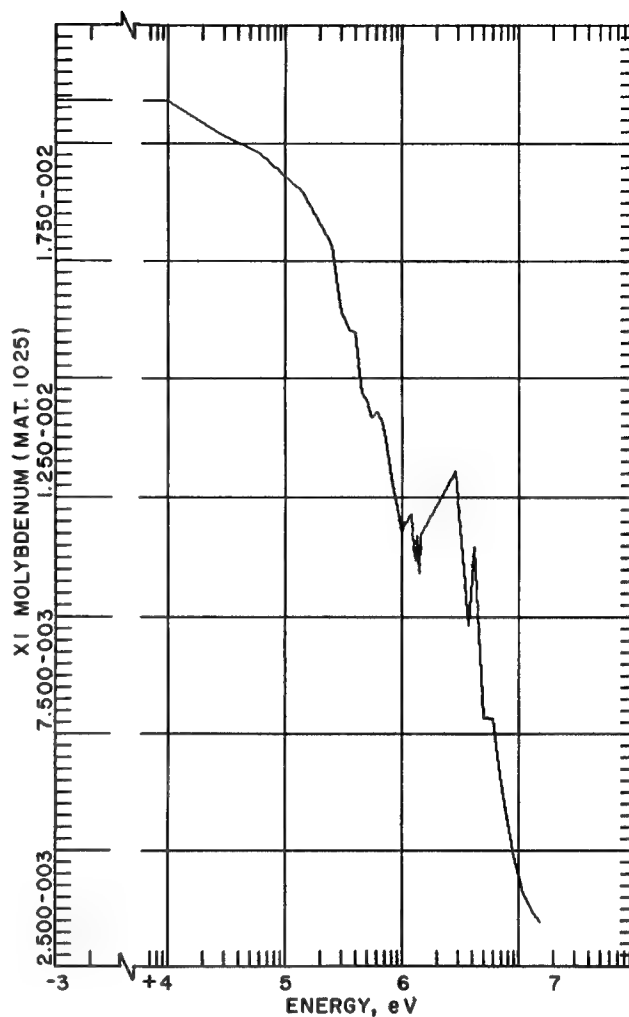
112-8763



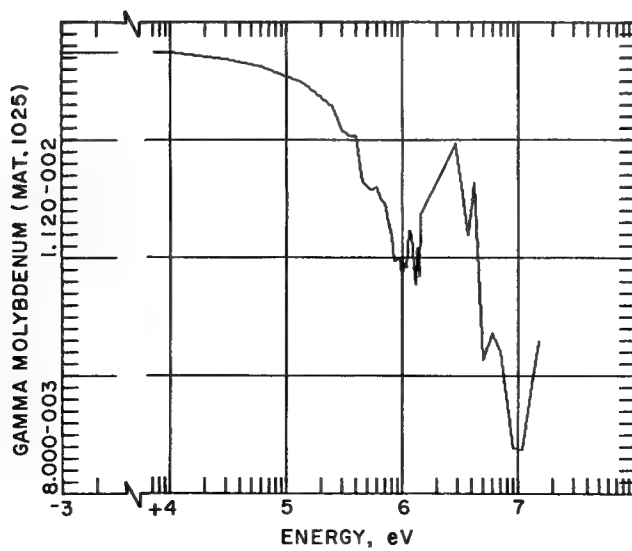
112-8773



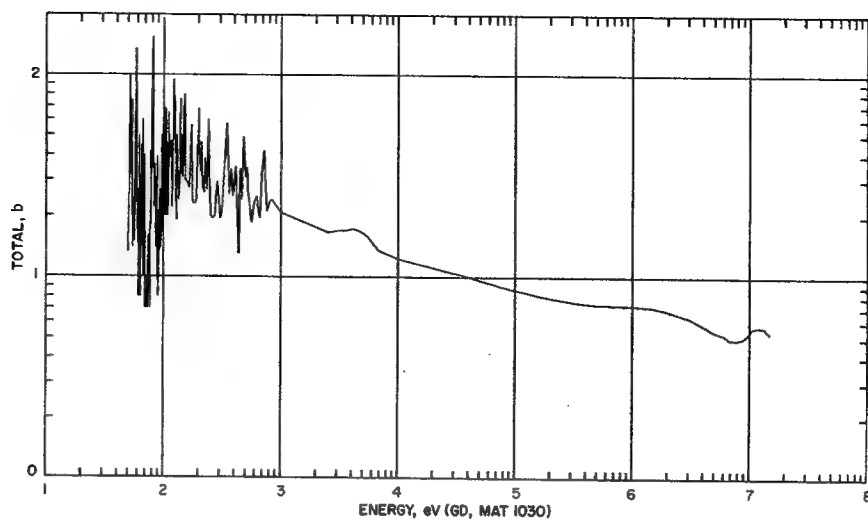
112-9179

Fig. 35. Molybdenum Average Elastic Scattering Cosine, $\bar{\mu}_L$ 

112-9178

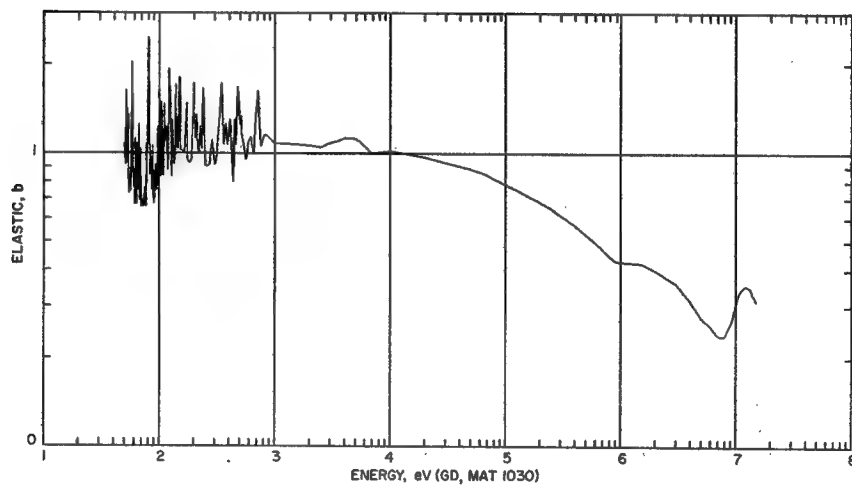
Fig. 36. Molybdenum Average Logarithmic Energy Decrement, ξ Fig. 37
Molybdenum γ

112-9172



112-8770

Fig. 38. Gadolinium Smooth Total Cross Section



112-8771

Fig. 39. Gadolinium Smooth Elastic Scattering Cross Section

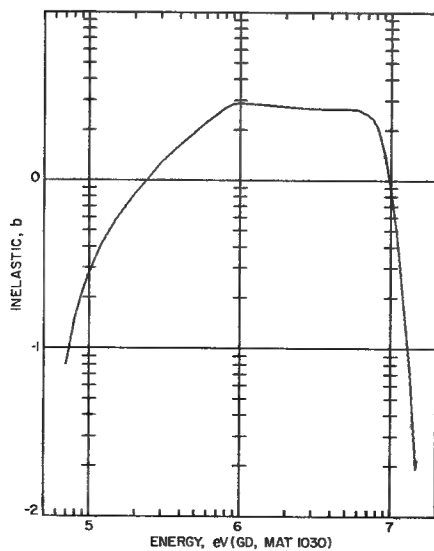
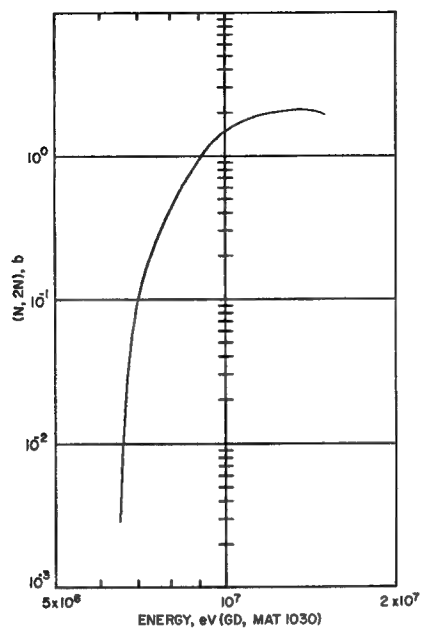
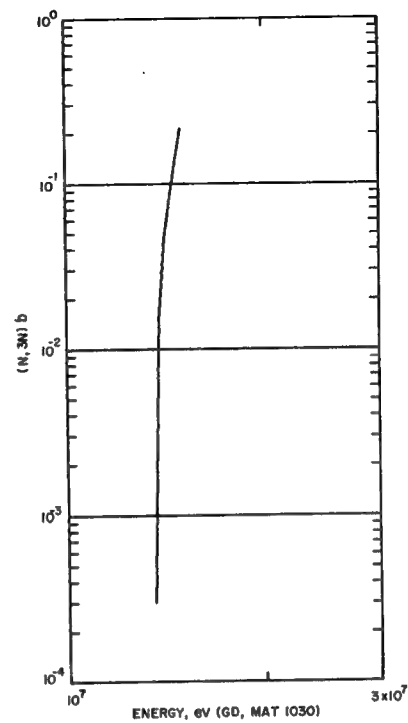


Fig. 40
Gadolinium Inelastic Scattering
Cross Section

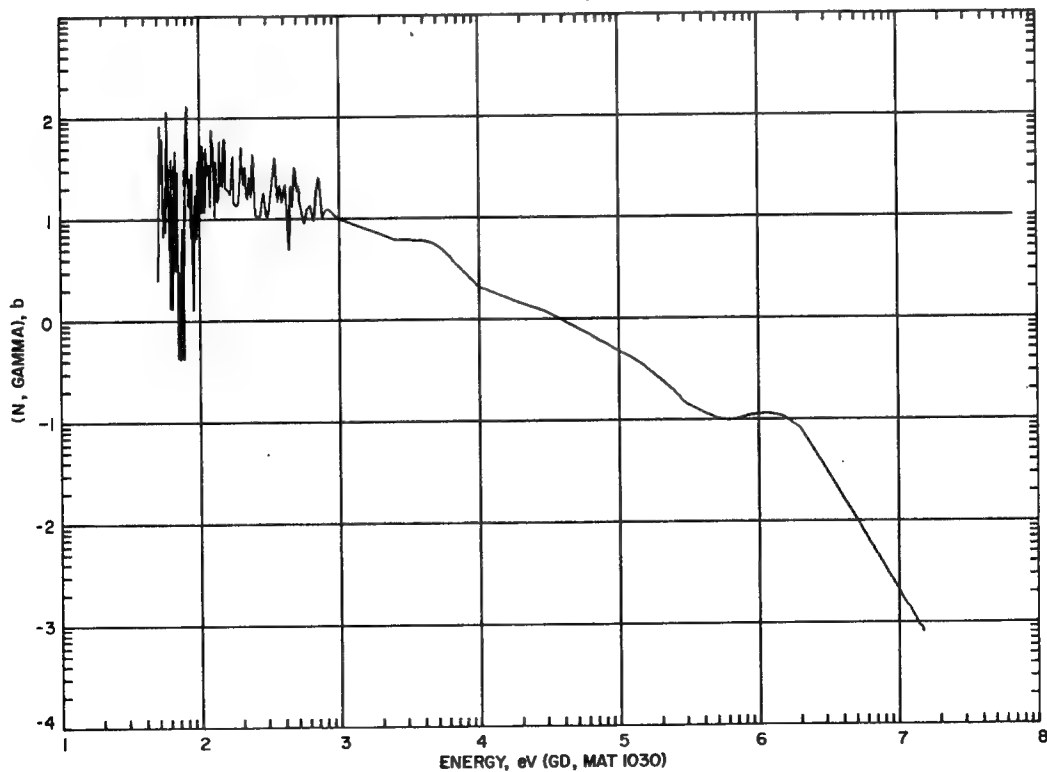
112-8759



112-8754

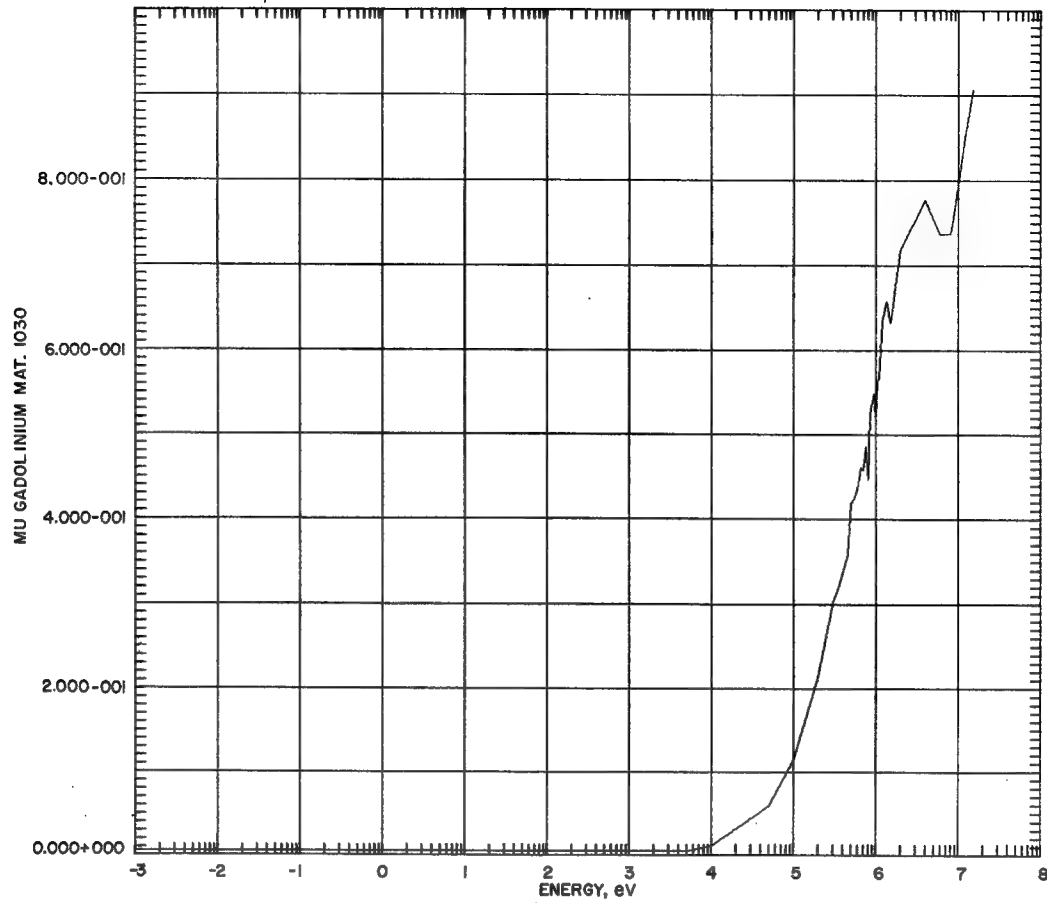
Fig. 41. Gadolinium (n,2n)
Cross Section

112-8765

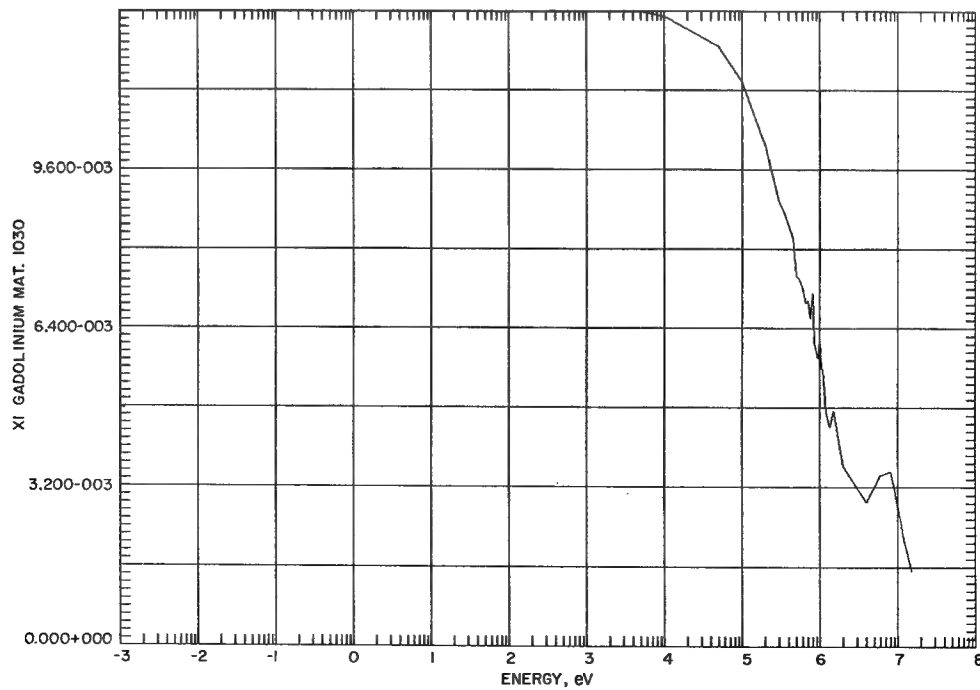
Fig. 42. Gadolinium (n,3n)
Cross Section

112-8772

Fig. 43. Gadolinium Smooth (n,γ) Cross Section

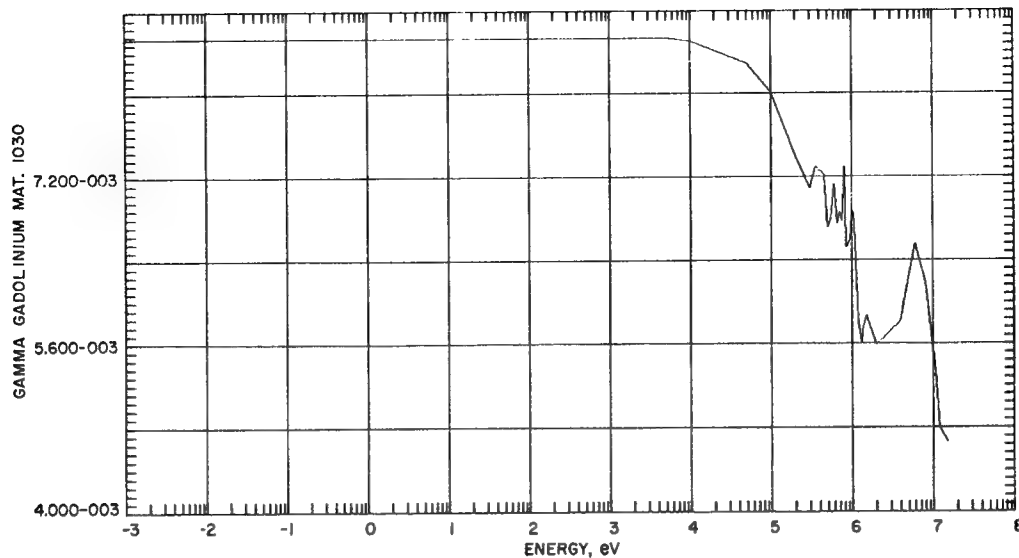


112-8780

Fig. 44. Gadolinium Average Elastic Scattering Cosine, $\bar{\mu}_L$ 

112-8775

Fig. 45. Gadolinium Average Logarithmic Energy Decrement, ξ



112-8788

Fig. 46. Gadolinium γ

B. Cross Sections Calculated from Resonance Parameters

The total, elastic, and capture cross sections as calculated from the single-level Breit-Wigner resonance parameters in ENDF/B File 2 are presented for molybdenum in Figs. 47-49 and for gadolinium in Figs. 50-52. The small portions of the molybdenum curves below 4 eV should be ignored since the resonance calculations begin at 4 eV. The very large cross sections for gadolinium at energies below 0.2 eV are shown in detail on Figs. 53-55.

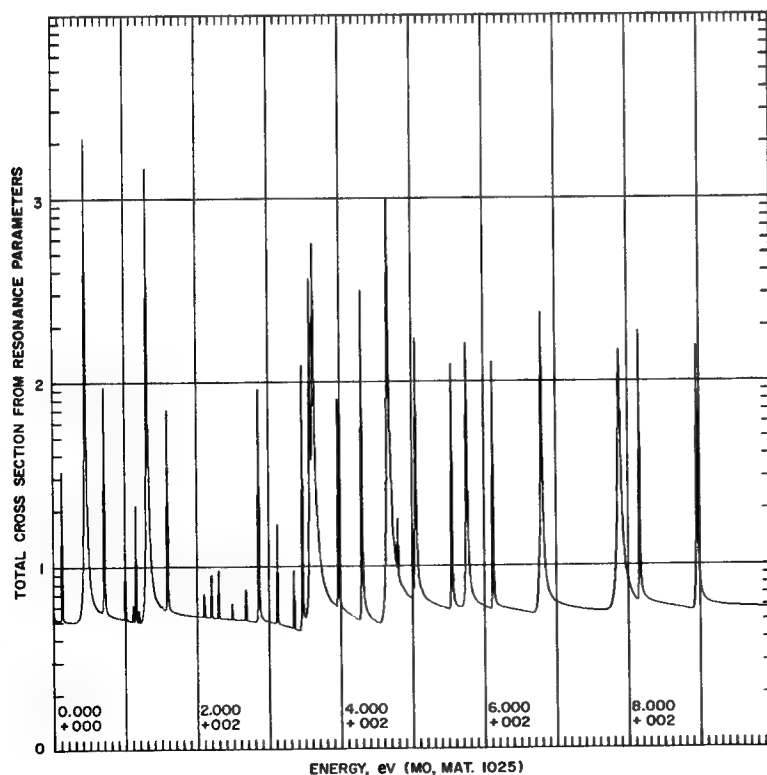
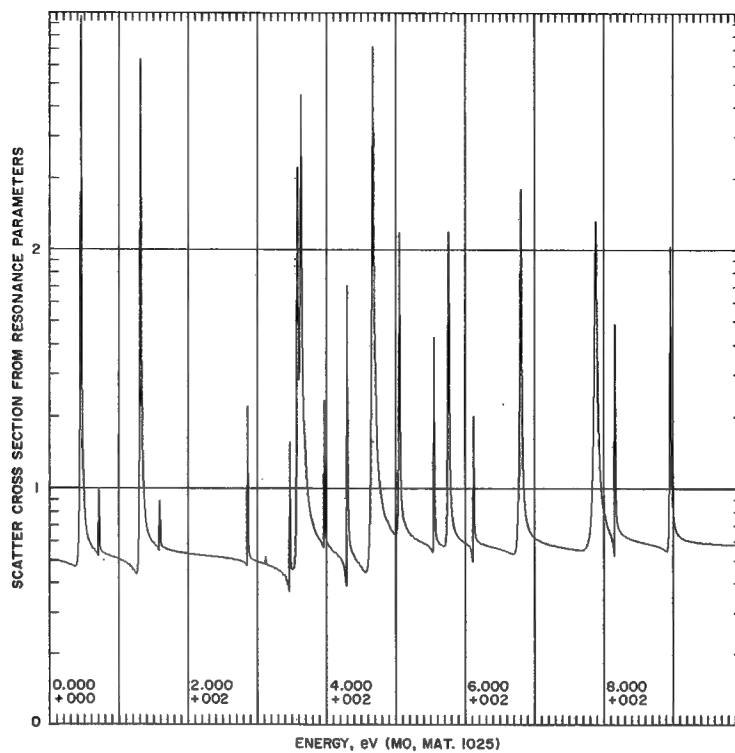


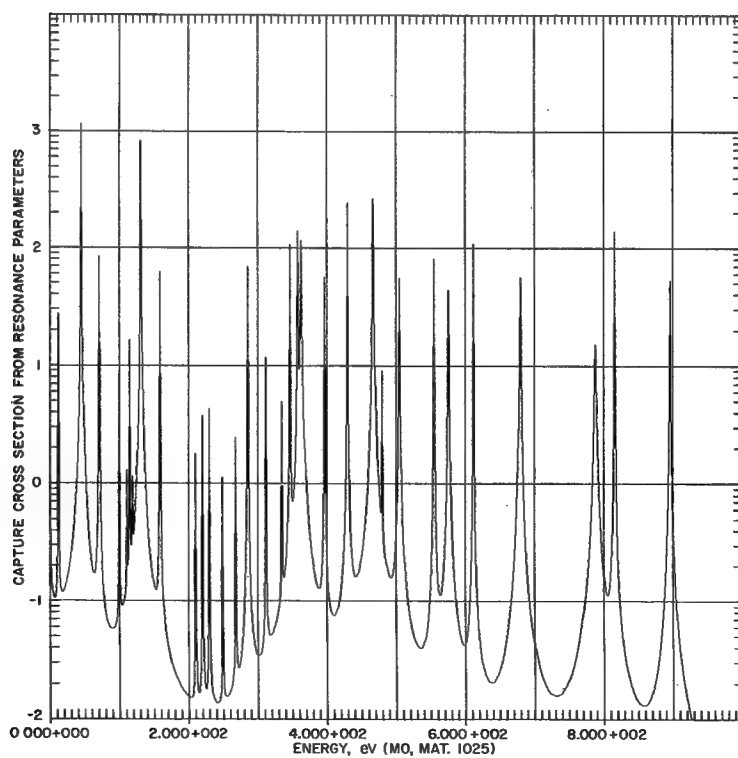
Fig. 47

Molybdenum Total Cross Section
from Resonance Parameters,
4-1000 eV



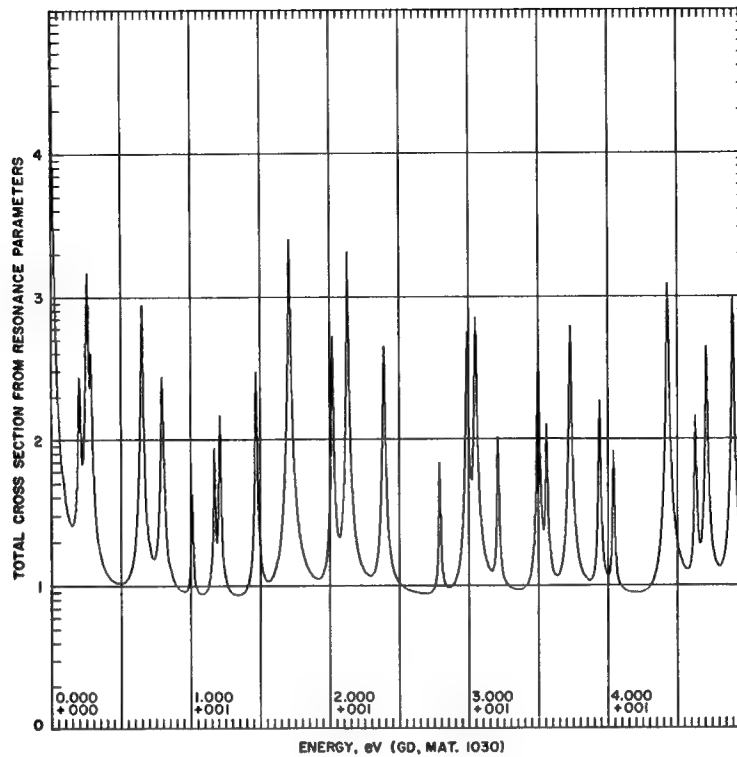
112-8924

Fig. 48. Molybdenum Elastic Scattering Cross Section
from Resonance Parameters, 4-1000 eV



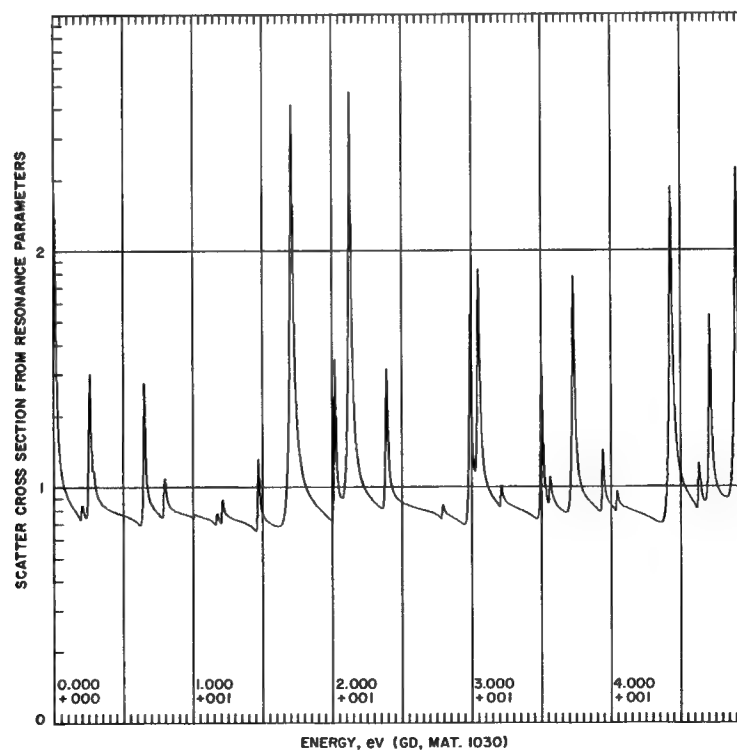
112-8921

Fig. 49. Molybdenum (n,γ) Cross Section from Resonance
Parameters, 4-1000 eV



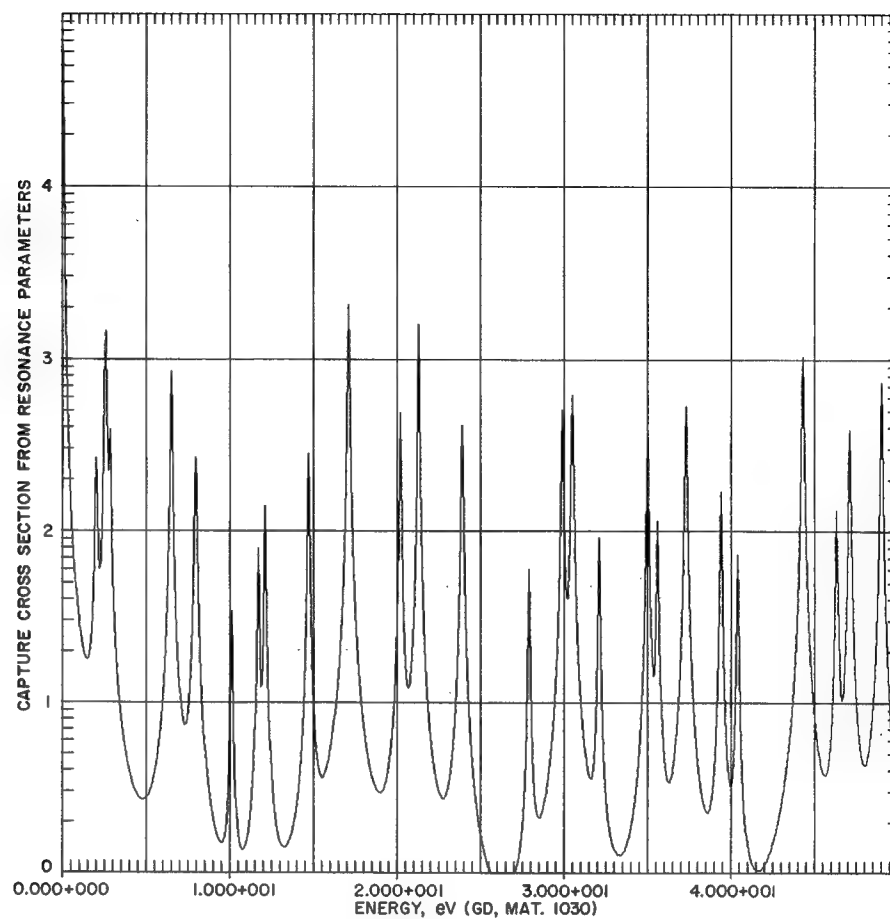
112-8925

Fig. 50. Gadolinium Total Cross Section from Resonance Parameters below 50 eV

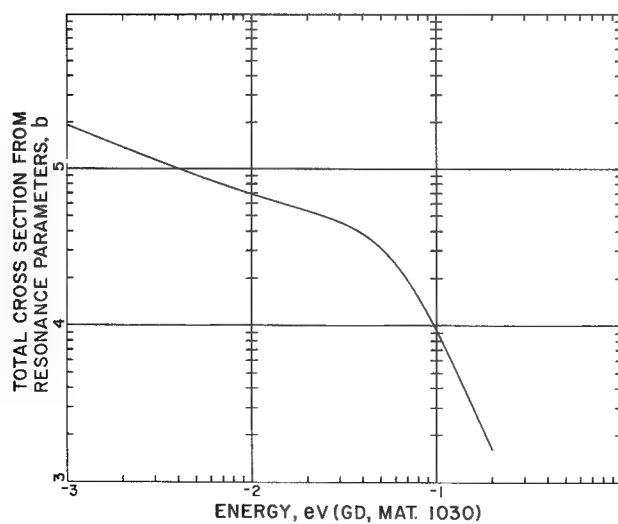


112-8922

Fig. 51. Gadolinium Elastic Scattering Cross Section from Resonance Parameters below 50 eV

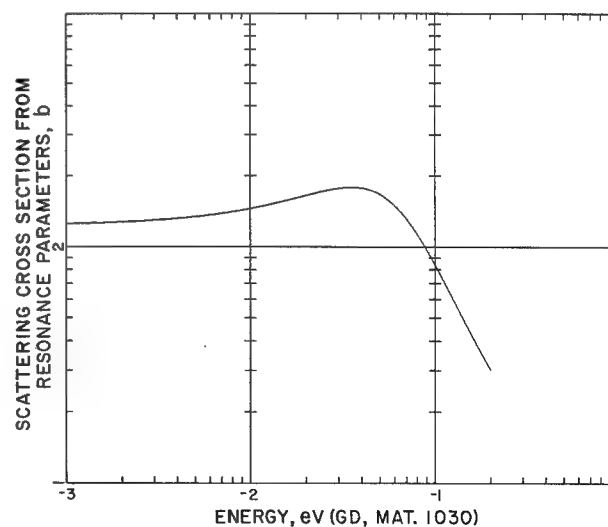


112-8926

Fig. 52. Gadolinium (n, γ) Cross Section from Resonance Parameters below 50 eV

112-9537

Fig. 53. Gadolinium Total Cross Section from Resonance Parameters, 0.001-0.2 eV



112-9556

Fig. 54. Gadolinium Elastic Scattering Cross Section from Resonance Parameters, 0.001-0.2 eV

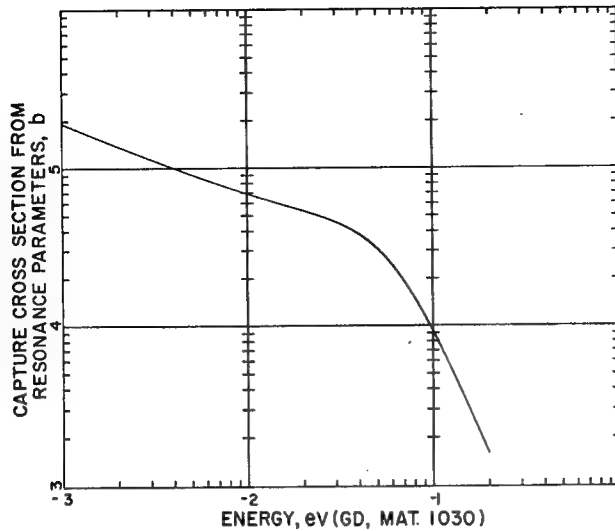


Fig. 55
Gadolinium (n,γ) Cross Section from
Resonance Parameters, 0.001-0.2 eV

112-9555

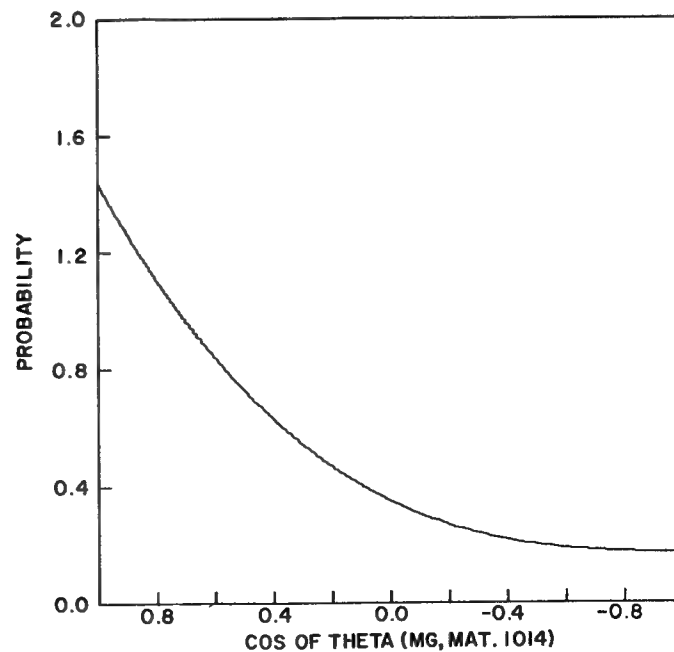
C. Elastic Scattering Angular Distributions

Figures 56-65 show typical elastic scattering angular distribution plots for the five materials. The normalization of the probability, $P(\cos \theta)$, is such that

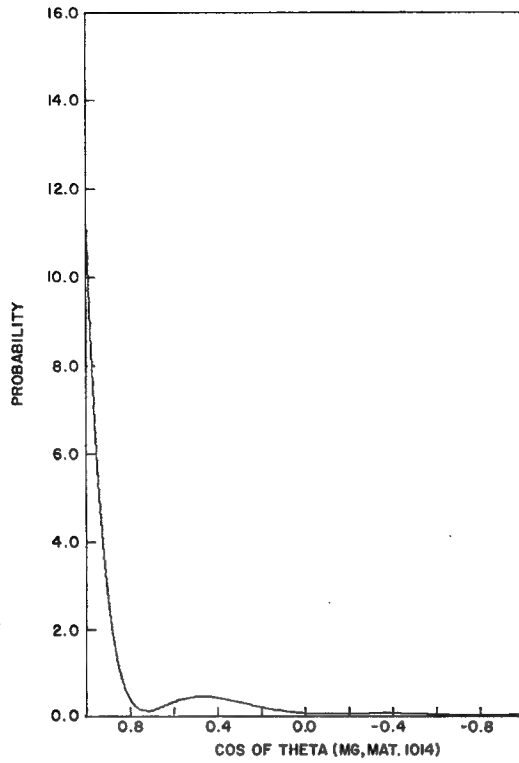
$$\int_{-1}^{+1} P(\mu) d\mu = 1,$$

where $\mu = \cos \theta$. Plots for an energy near 1 MeV and for the highest energy used are given for each material. If data for all energies at which angular distributions are presented in File 4 were plotted, 169 graphs would result.

Fig. 56
Magnesium Elastic Scattering Angular
Distribution at 0.991 MeV

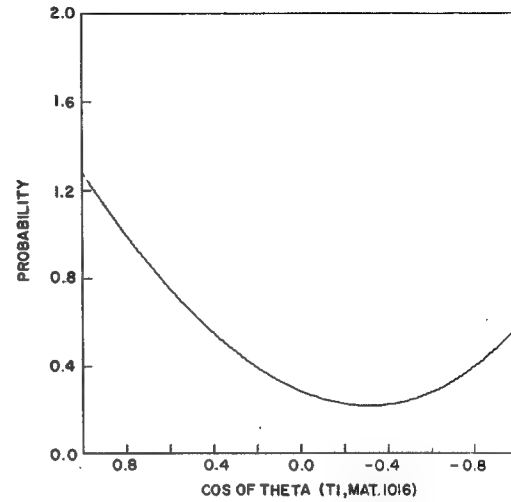


112-9171



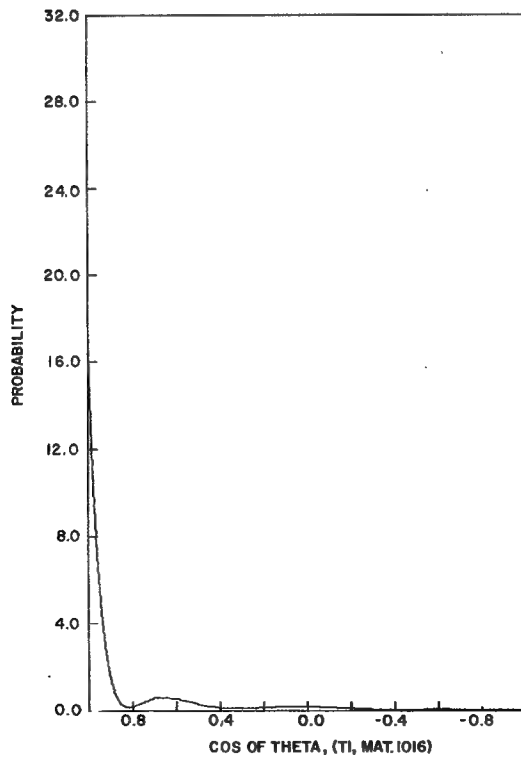
112-9185

Fig. 57. Magnesium Elastic Scattering Angular Distribution at 18 MeV



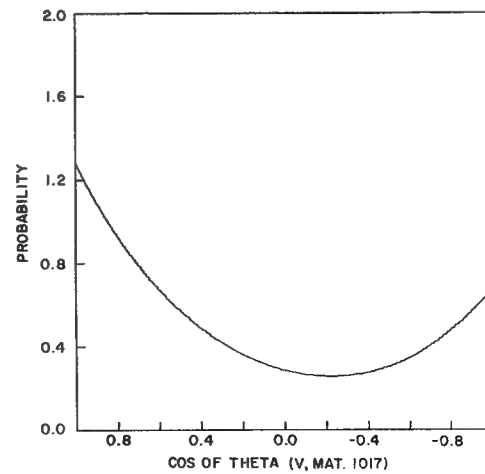
112-9169

Fig. 58. Titanium Elastic Scattering Angular Distribution at 0.991 MeV



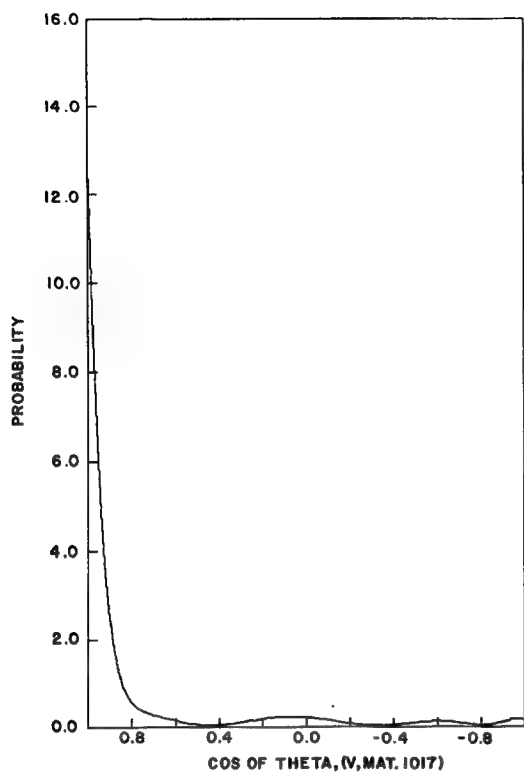
112-9186

Fig. 59. Titanium Elastic Scattering Angular Distribution at 18 MeV



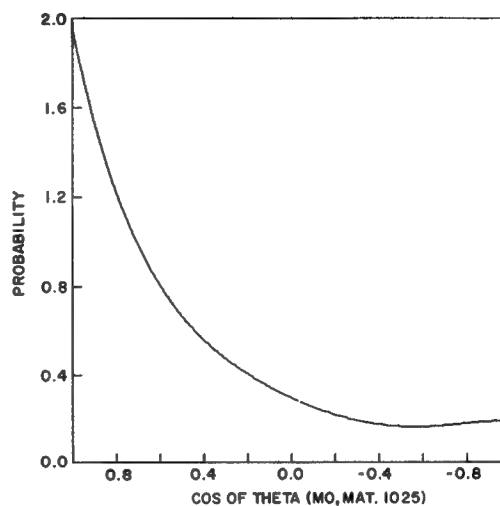
112-9168

Fig. 60. Vanadium Elastic Scattering Angular Distribution at 0.982 MeV



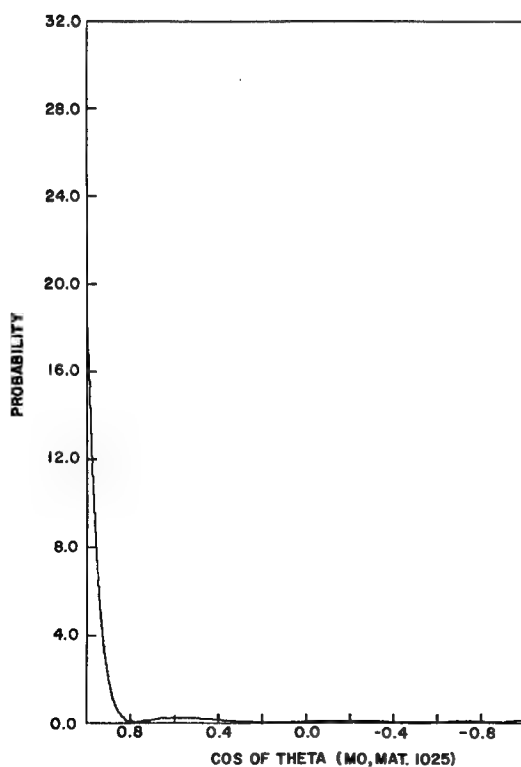
112-9182

Fig. 61. Vanadium Elastic Scattering Angular Distribution at 15 MeV



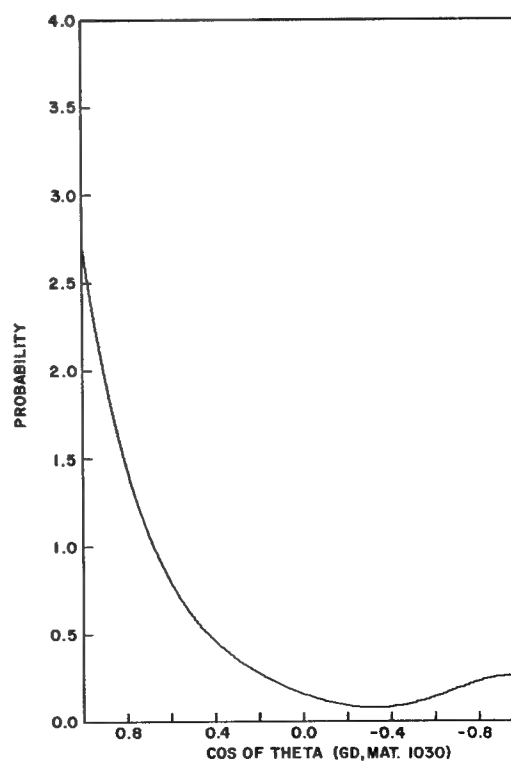
112-9170

Fig. 62. Molybdenum Elastic Scattering Angular Distribution at 1 MeV



112-9183

Fig. 63. Molybdenum Elastic Scattering Angular Distribution at 15 MeV



112-9181

Fig. 64. Gadolinium Elastic Scattering Angular Distribution at 1 MeV

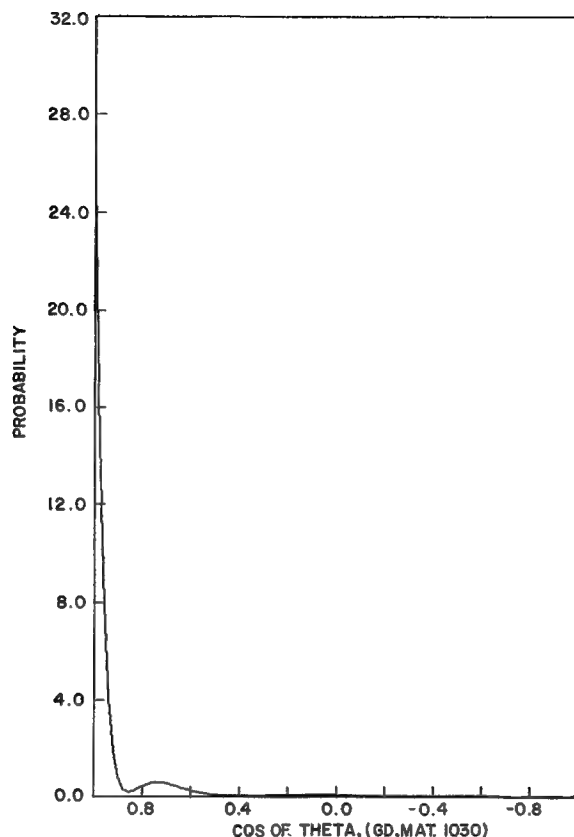


Fig. 65
Gadolinium Elastic Scattering
Angular Distribution at 15 MeV

112-9184

D. Secondary-energy Distributions

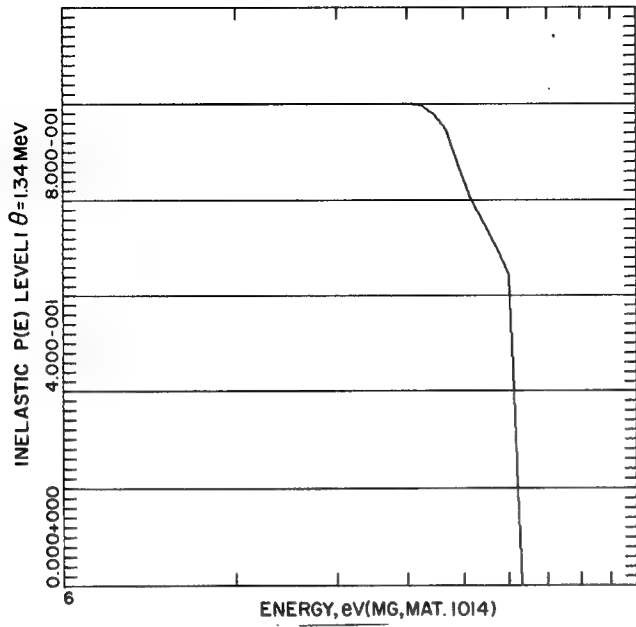
The differential inelastic scattering cross section in ENDF/B is written as³

$$\frac{d\sigma}{dE'} (E' \leftarrow E) = \sigma(E) p(E' \leftarrow E),$$

where

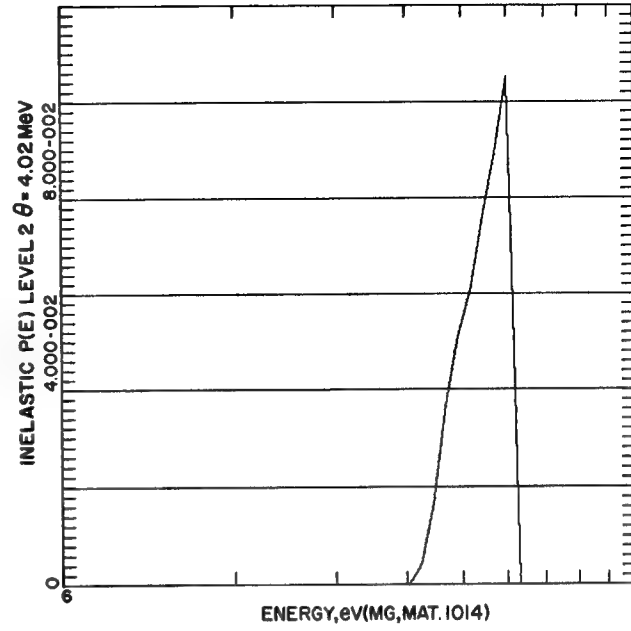
$$p(E' \leftarrow E) = \sum_{k=1}^{NK} p_k(E) f_k(E' \leftarrow E),$$

and NK is the number of laws considered. For scattering to a resolved level, $f_k(E' \leftarrow E) = \delta(E' - E + \theta_k)$, which is law $LF = 3$ in ENDF/B; for scattering to the continuum, $f_k(E' \leftarrow E) = (E'/\theta^2) \exp(-E'/\theta)$, where $\theta = \theta(E)$ and is tabulated (law $LF = 9$). Probabilities, $p_k(E)$, are plotted against E in Figs. 66-70 for scattering to the four resolved levels and the continuum in magnesium. The nuclear temperature, $\theta(E)$, for inelastic scattering in magnesium is plotted against E in Fig. 71. For the $(n,2n)$ reaction, we consider scattering to the continuum only. Thus there is one scattering law having $LF = 9$ for which a plot of $\theta(E)$ vs E for magnesium is given in Fig. 72.



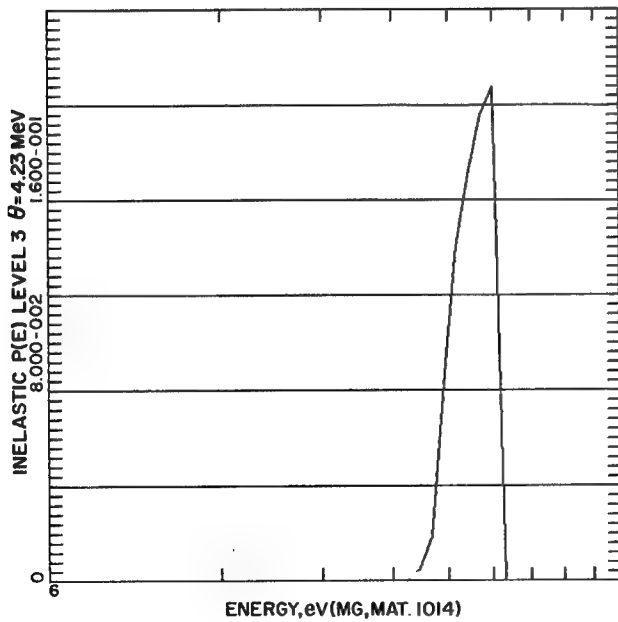
112-9541

Fig. 66. Magnesium--Probability for Inelastic Scattering to the First Level



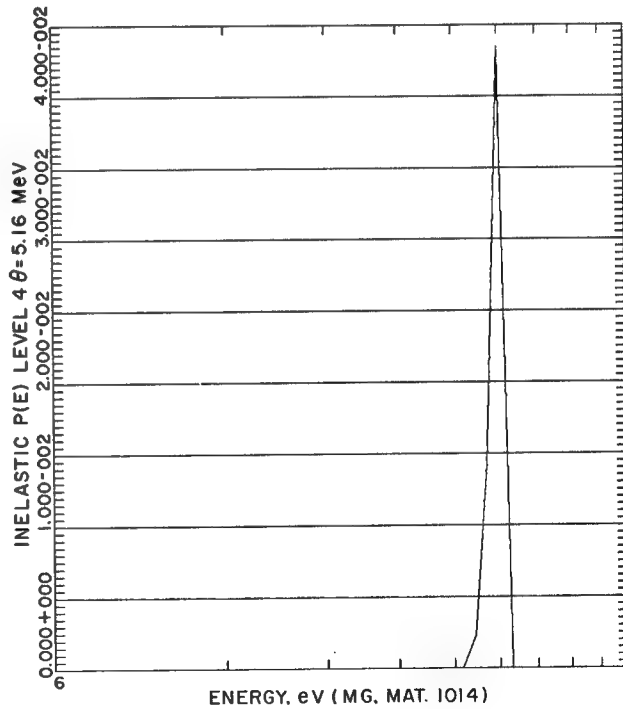
112-9542

Fig. 67. Magnesium--Probability for Inelastic Scattering to the Second Level



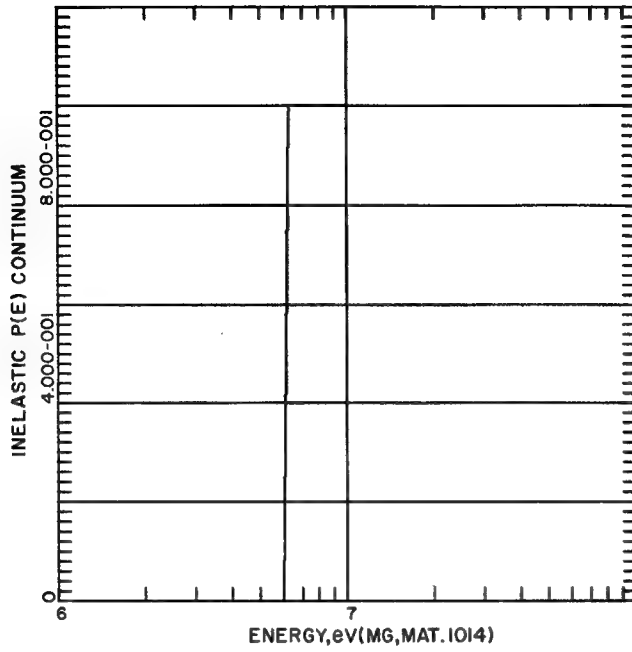
112-9539

Fig. 68. Magnesium--Probability for Inelastic Scattering to the Third Level



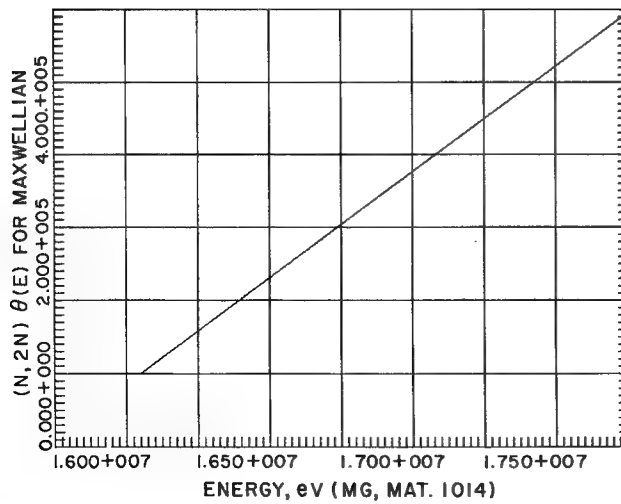
112-9552

Fig. 69. Magnesium--Probability for Inelastic Scattering to the Fourth Level



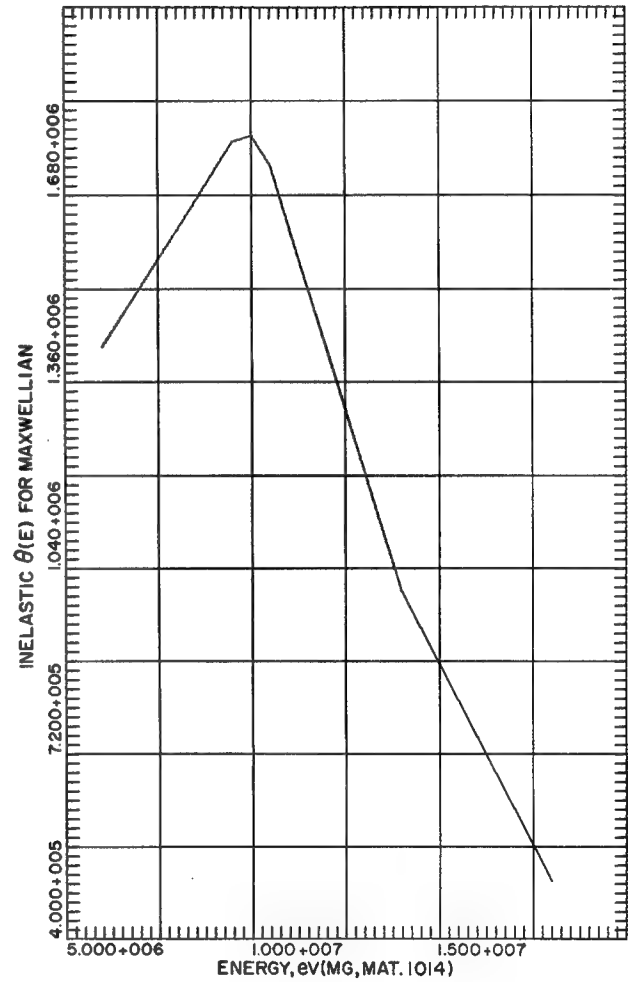
112-9557

Fig. 70. Magnesium--Probability for Inelastic Scattering to the Continuum



112-9563

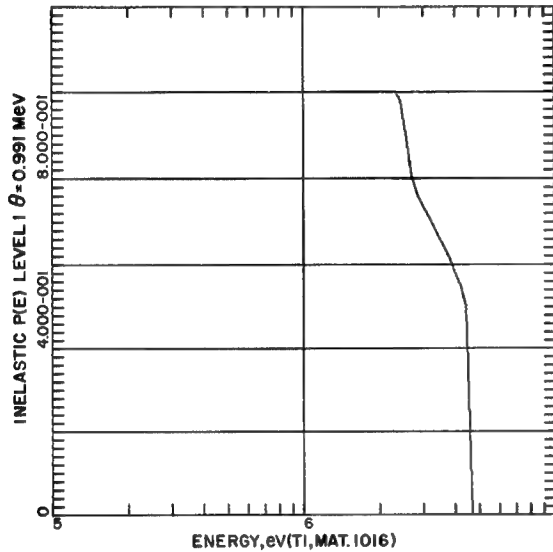
Fig. 72. Magnesium-- $\theta(E)$ for the (n,2n) Reaction



112-9568

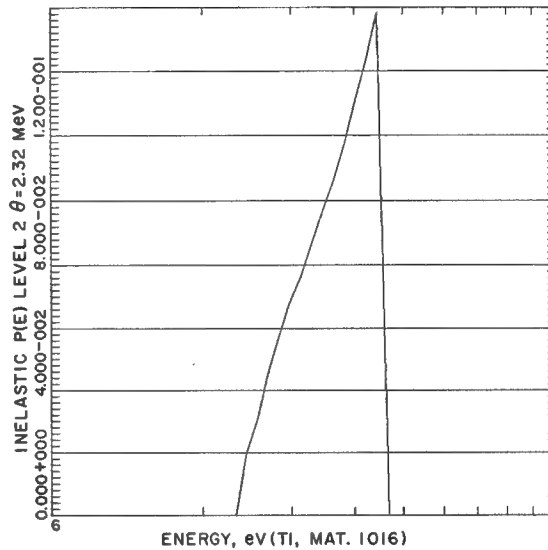
Fig. 71. Magnesium-- $\theta(E)$ for Inelastic Scattering

Figures 73-79, 80-86, and 87-93 present data for titanium, vanadium, and molybdenum, respectively, similar to those given for magnesium in Figs. 66-72. A plot of $\theta(E)$ vs E for the $(n,3n)$ reaction in molybdenum is presented in Fig. 94. The $(n,3n)$ reaction involves one $LF = 9$ law just as the $(n,2n)$ reaction does. Finally, Figs. 95-97 are plots of $\theta(E)$ vs E for inelastic, $(n,2n)$, and $(n,3n)$ reactions, respectively, in gadolinium. Since no resolved levels were considered for inelastic scattering in gadolinium, no probabilities are plotted.



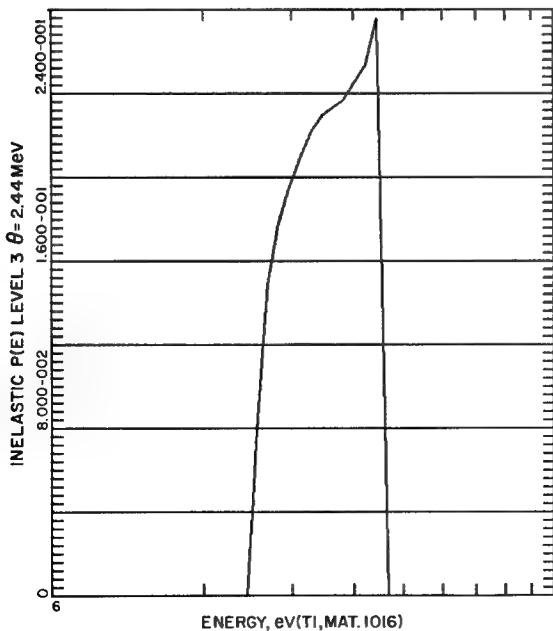
112-9540

Fig. 73. Titanium--Probability for Inelastic Scattering to the First Level



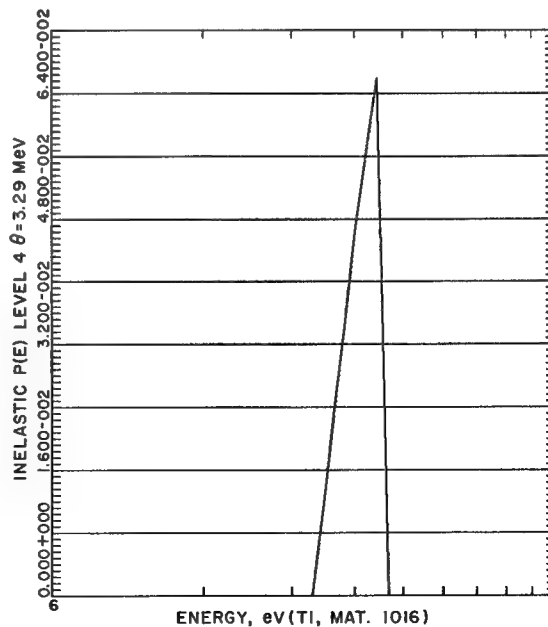
112-9544

Fig. 74. Titanium--Probability for Inelastic Scattering to the Second Level



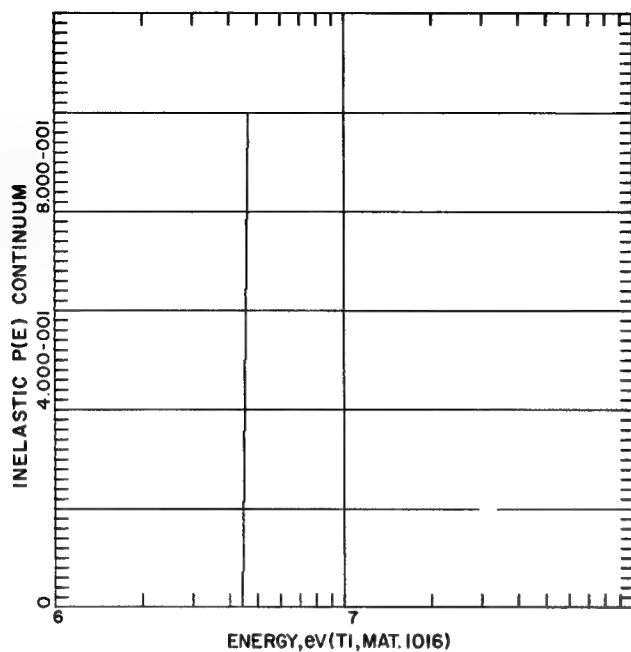
112-9545

Fig. 75. Titanium--Probability for Inelastic Scattering to the Third Level



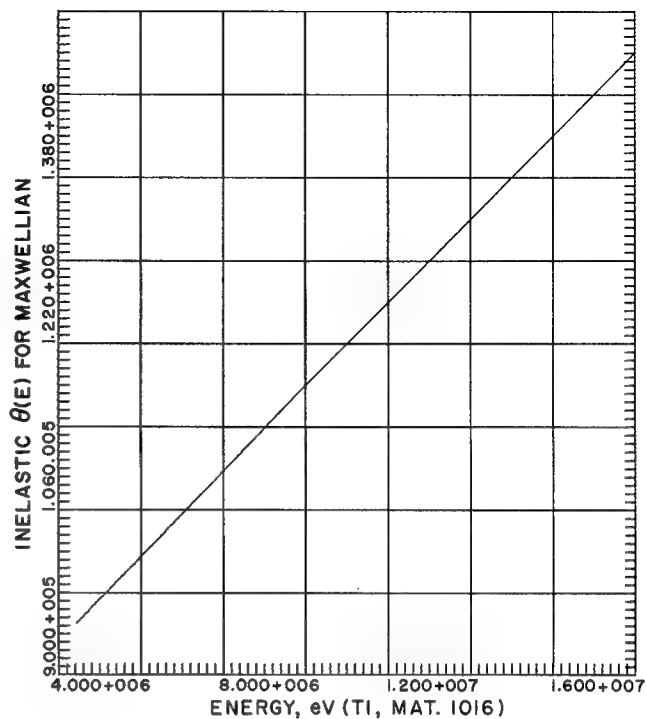
112-9550

Fig. 76. Titanium--Probability for Inelastic Scattering to the Fourth Level

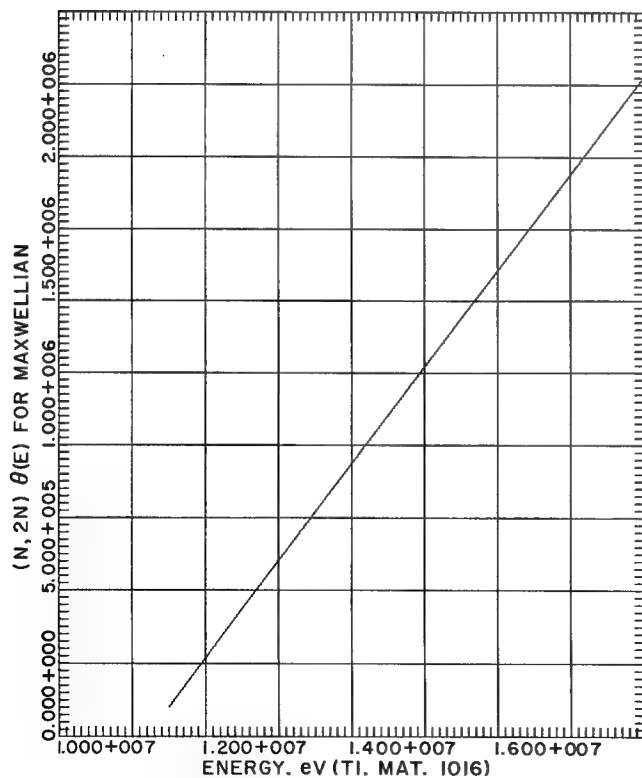


112-9558

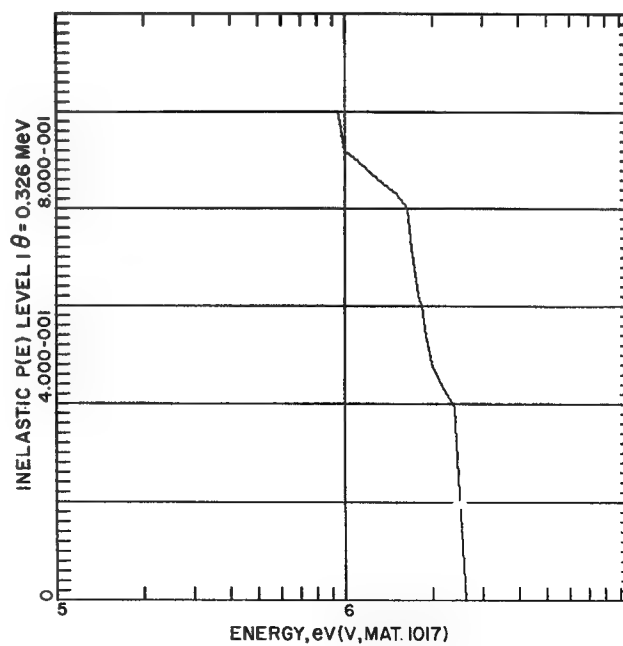
Fig. 77. Titanium--Probability for Inelastic Scattering to the Continuum



112-9562

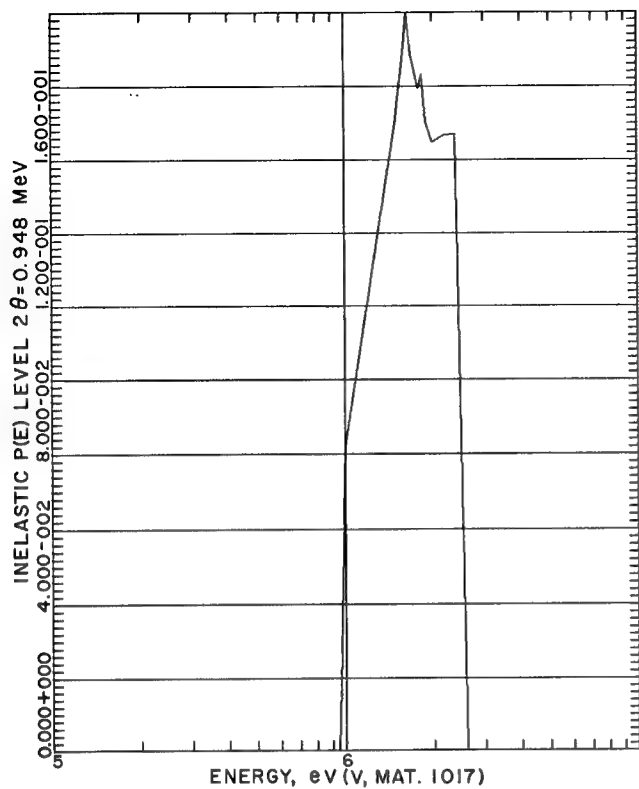
Fig. 78. Titanium-- $\theta(E)$ for Inelastic Scattering

112-9564

Fig. 79. Titanium-- $\theta(E)$ for the (n,2n) Reaction

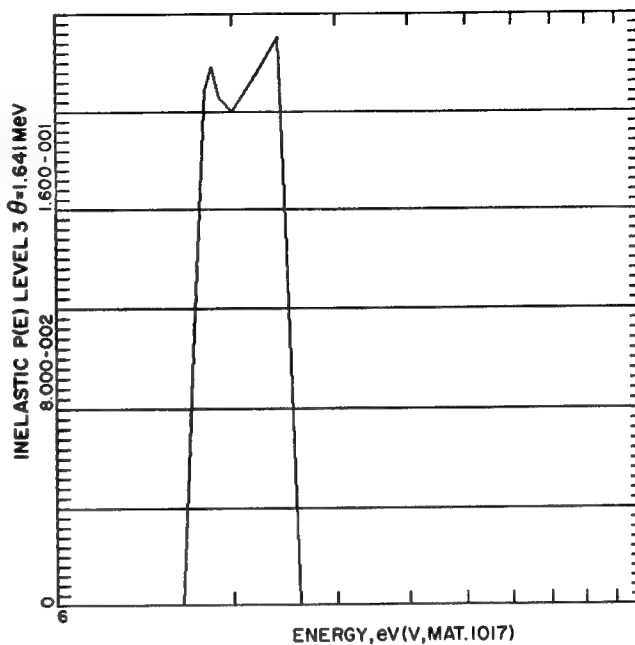
112-9554

Fig. 80. Vanadium--Probability for Inelastic Scattering to the First Level



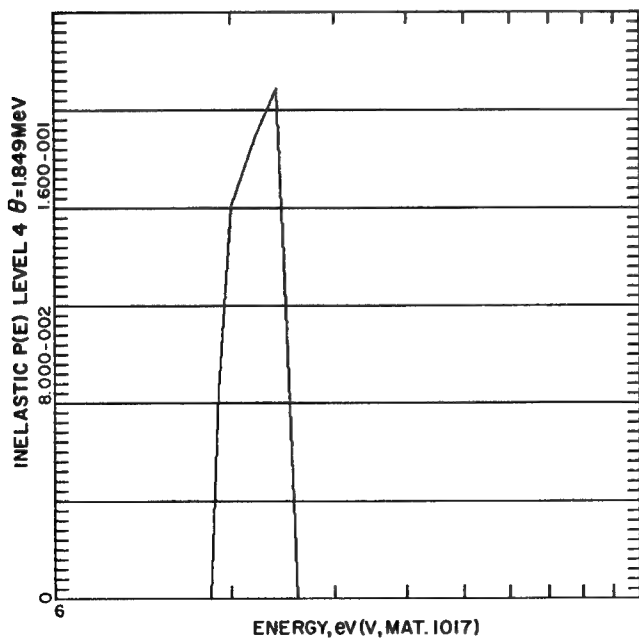
112-9547

Fig. 81. Vanadium--Probability for Inelastic Scattering to the Second Level



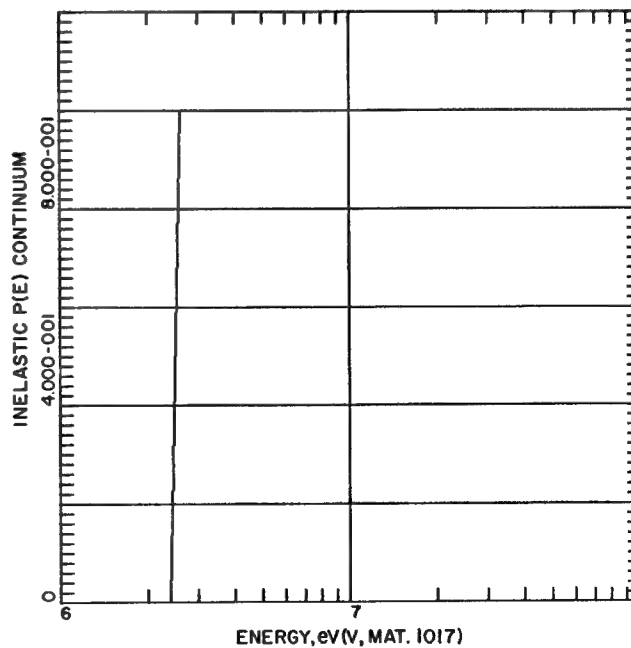
112-9546

Fig. 82. Vanadium--Probability for Inelastic Scattering to the Third Level



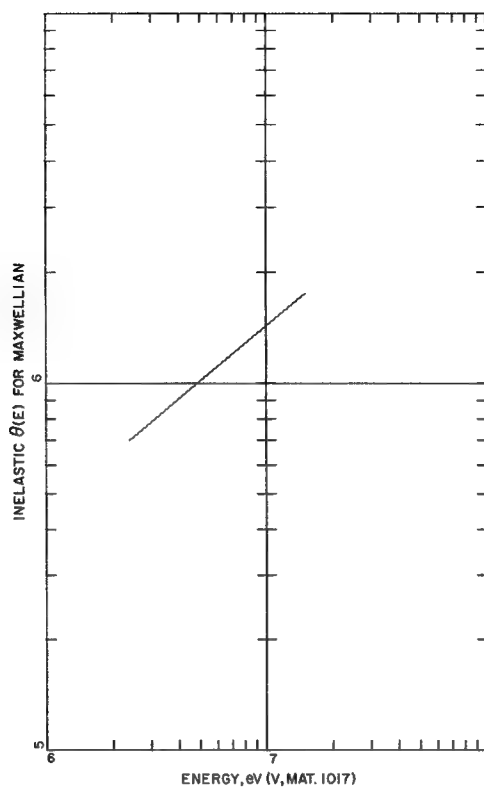
112-9543

Fig. 83. Vanadium--Probability for Inelastic Scattering to the Fourth Level

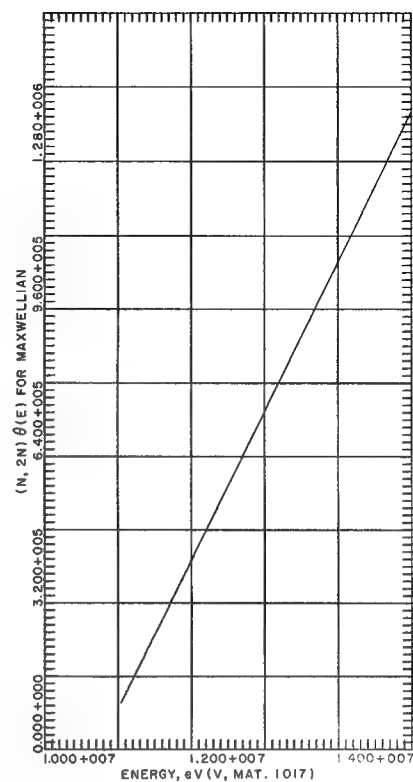


112-9559

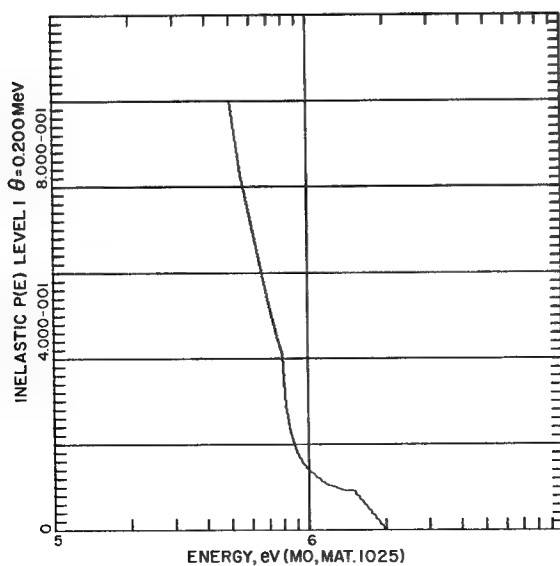
Fig. 84. Vanadium--Probability for Inelastic Scattering to the Continuum



112-9569

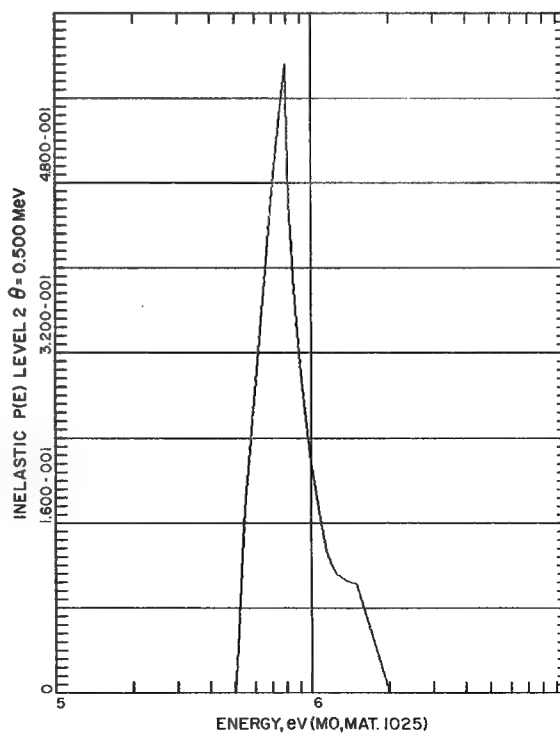
Fig. 85. Vanadium-- $\theta(E)$ for Inelastic Scattering

112-9567

Fig. 86. Vanadium-- $\theta(E)$ for the (n,2n) Reaction

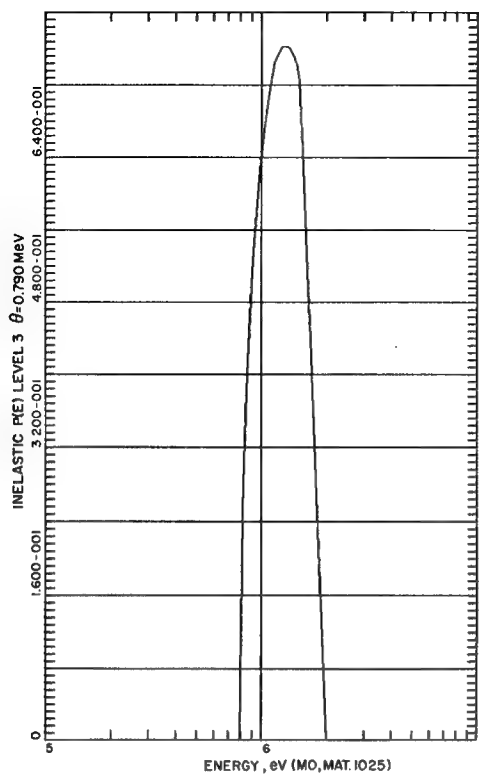
112-9553

Fig. 87. Molybdenum--Probability for Inelastic Scattering to the First Level



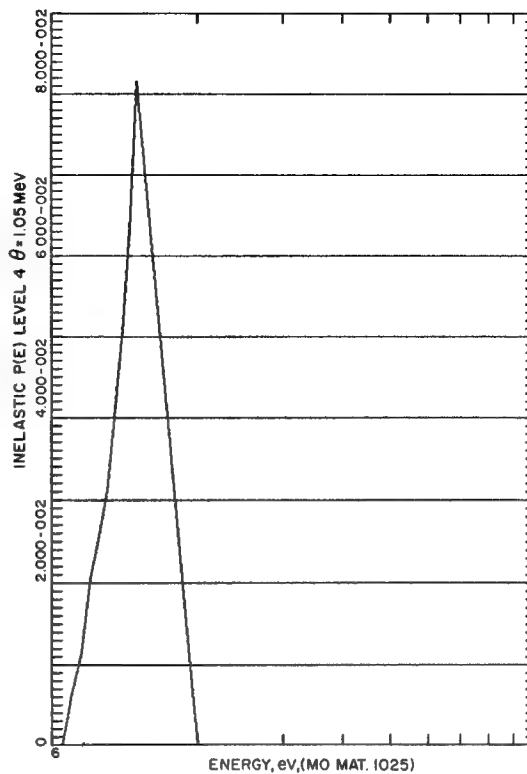
112-9548

Fig. 88. Molybdenum--Probability for Inelastic Scattering to the Second Level



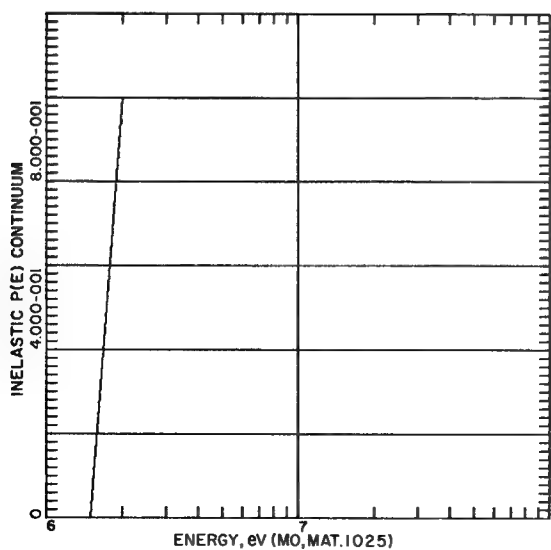
112-9551

Fig. 89. Molybdenum--Probability for Inelastic Scattering to the Third Level



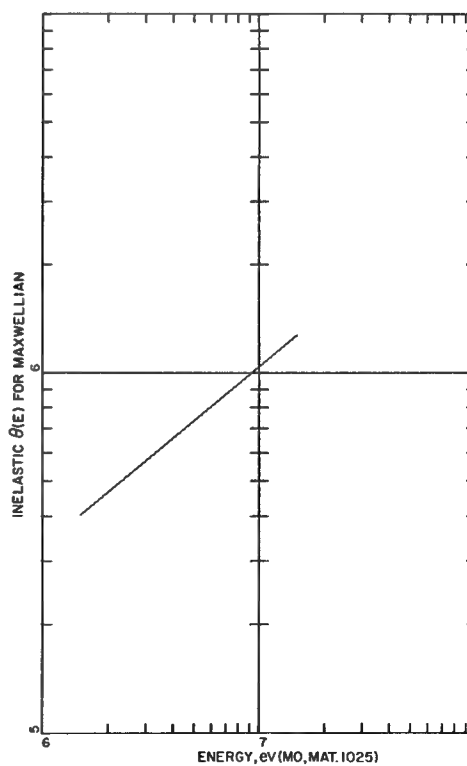
112-9549

Fig. 90. Molybdenum--Probability for Inelastic Scattering to the Fourth Level



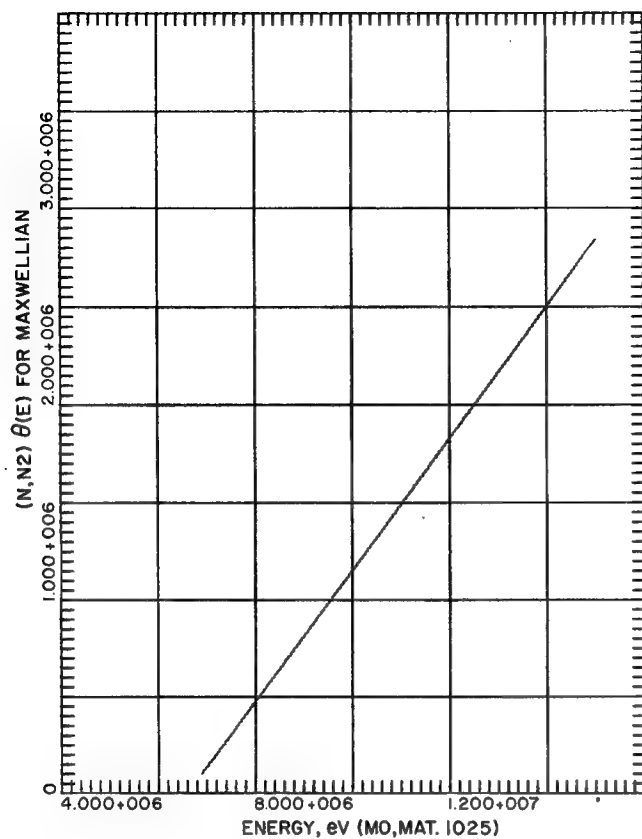
112-9560

Fig. 91. Molybdenum--Probability for Inelastic Scattering to the Continuum

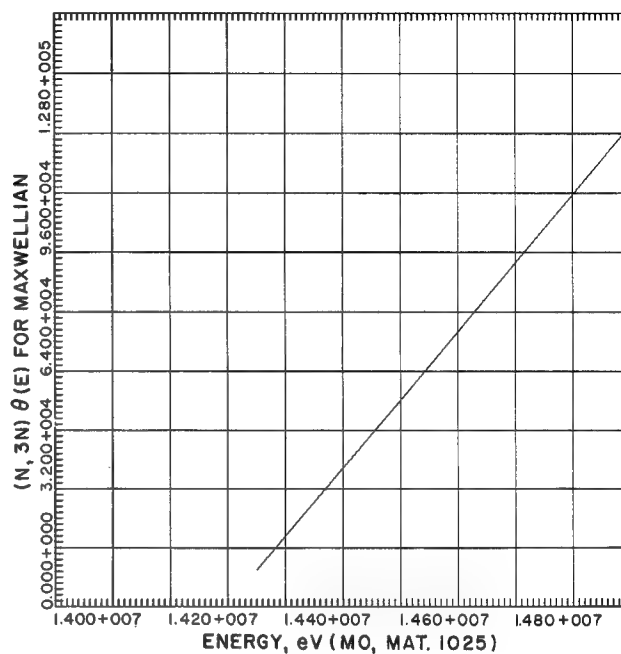


112-9570

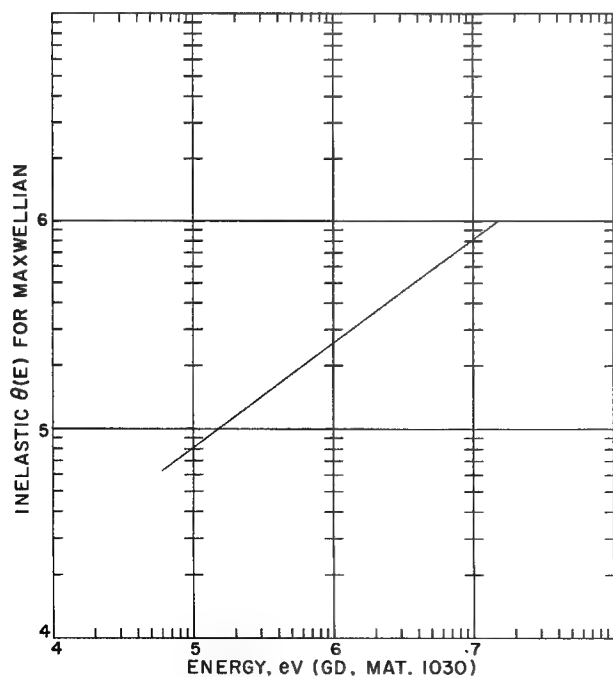
Fig. 92. Molybdenum-- $\theta(E)$ for Inelastic Scattering



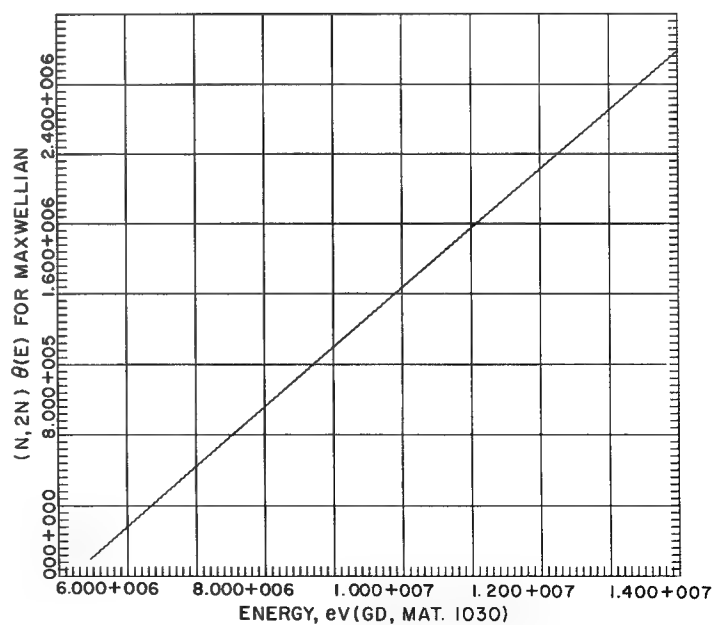
112-9566

Fig. 93. Molybdenum-- $\theta(E)$ for the (n,2n) Reaction

112-9565

Fig. 94. Molybdenum-- $\theta(E)$ for the (n,3n) Reaction

112-9571

Fig. 95. Gadolinium-- $\theta(E)$ for Inelastic Scattering

112-9561

Fig. 96. Gadolinium-- $\theta(E)$ for the (n,2n) Reaction

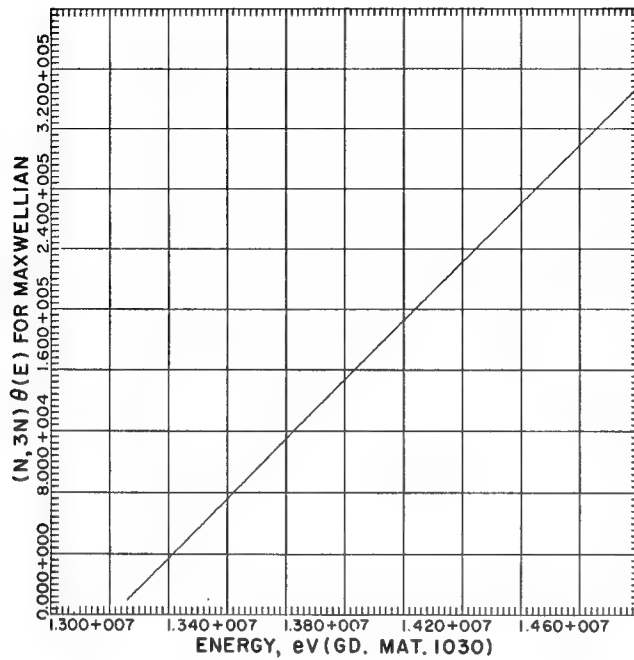


Fig. 97
Gadolinium-- $\theta(E)$ for
the (n,3n) Reaction

112-9538

VIII. ENDF/B LISTINGS

The data in the ENDF/B format for magnesium, titanium, vanadium, molybdenum, and gadolinium are listed in Appendixes A, B, C, D, and E, respectively. These are the versions containing all the modifications that were made in the summer of 1967 and were distributed in September 1967 on ENDF/B Tape 114. The listings will not be explained here since all information necessary for understanding the formats involved is given in Ref. 3.

APPENDIX A
ENDF/B Listing for Magnesium

12000.0	2.4101E+01	0	0	0	01014	1451	1
0.0	0.0	0	0	20	01014	1451	2
MAGNESIUM CROSS SECTIONS MATERIAL 1014					1014	1451	3
THIS EVALUATION IS BASED PRIMARILY ON UNC-5002 BY N.TRALLI ET AL.					1014	1451	4
THIS DATA WAS PREPARED BY E.PENNINGTON,A.N.L.,IN SEPTEMBER 1966.					1014	1451	5
THE FOLLOWING MODIFICATIONS WERE MADE OF THE DATA FROM THE PRIMARY					1014	1451	6
SOURCE-					1014	1451	7
TOTAL,SCATTERING,AND CAPTURE CROSS SECTIONS WERE EXTENDED DOWN TO					1014	1451	8
.001 EV ON THE BASIS OF CONSTANT SCATTERING AND 1/V CAPTURE.					1014	1451	9
NEW TOTAL AND HENCE ELASTIC SCATTERING CROSS SECTIONS WERE USED					1014	1451	10
IN THE RANGE FROM 2.3 TO 8.5 MEV,BASED ON BNL-325,VOL 1,MAY 1964.					1014	1451	11
THE (N,NP) CROSS SECTION WAS ADDED TO THE INELASTIC SCATTERING					1014	1451	12
CROSS SECTION.					1014	1451	13
VALUES OF MU BAR LAB,XI,AND GAMMA WERE CALCULATED FROM THE					1014	1451	14
LEGENDRE EXPANSION COEFFICIENTS.					1014	1451	15
NEW LEGENDRE COEFFICIENTS WERE CALCULATED AT 14.0 AND 18.0 MEV.					1014	1451	16
BASED ON ABACUS-2 PROBLEMS.					1014	1451	17
NUCLEAR TEMPERATURES WERE ESTIMATED FOR CONTINUUM INELASTIC					1014	1451	18
SCATTERING AND (N,2N) REACTIONS.					1014	1451	19
PARAMETERS FOR THE FREE GAS THERMAL SCATTERING LAW WERE INCLUDED.					1014	1451	20
NO RESONANCE PARAMETERS ARE INCLUDED,EITHER HERE OR IN UNC-5002.					1014	1451	21
SINCE THE RESONANCES ARE SUCH THAT SELF-SHIELDING IS UNIMPORTANT.					1014	1451	22
0.0	0.0	0	0	0	01014	1	0
0.0	0.0	0	0	0	01014	0	0
12000.0	2.4101E+01	0	0	0	01014	3	1
0.0	0.0	0	0	1	2531014	3	1
253	5				1014	3	1
1.0000E-03	3.7770E+00	2.0000E-03	3.6700E+00	4.0000E-03	3.5940E+00	1014	3
6.0000E-03	3.5600E+00	8.0000E-03	3.5400E+00	1.0000E-02	3.5260E+00	1014	3
2.0000E-02	3.4921E+00	4.0000E-02	3.4681E+00	6.0000E-02	3.4574E+00	1014	3
8.0000E-02	3.4511E+00	1.0000E-01	3.4467E+00	2.0000E-01	3.4360E+00	1014	3
4.0000E-01	3.4284E+00	6.0000E-01	3.4250E+00	8.0000E-01	3.4230E+00	1014	3
1.0000E+00	3.4216E+00	1.5000E+00	3.4195E+00	2.0000E+00	3.4382E+00	1014	3
4.0000E+00	3.4658E+00	6.0000E+00	3.4847E+00	8.0000E+00	3.5041E+00	1014	3
1.0000E+01	3.5036E+00	4.0000E+01	3.5018E+00	1.0000E+02	3.5012E+00	1014	3
1.3500E+02	3.5010E+00	9.9000E+03	3.5010E+00	1.0420E+04	3.4810E+00	1014	3
1.0960E+04	3.4510E+00	1.1500E+04	3.4210E+00	1.2100E+04	3.4010E+00	1014	3
1.2700E+04	3.4210E+00	1.3400E+04	3.4310E+00	1.4100E+04	3.5000E+00	1014	3
1.4800E+04	3.6000E+00	1.5500E+04	3.7500E+00	1.6300E+04	3.9300E+00	1014	3
1.7200E+04	4.2300E+00	1.8100E+04	4.7000E+00	1.9000E+04	5.6000E+00	1014	3
2.0000E+04	8.6000E+00	2.1000E+04	5.8000E+00	2.2100E+04	4.6000E+00	1014	3
2.3300E+04	4.1200E+00	2.4400E+04	3.7500E+00	2.5700E+04	3.6500E+00	1014	3
2.7000E+04	3.5500E+00	2.8400E+04	3.5000E+00	2.9900E+04	3.4800E+00	1014	3
3.1400E+04	3.4300E+00	3.3000E+04	3.4000E+00	3.4700E+04	3.4000E+00	1014	3
3.6500E+04	3.4000E+00	3.8300E+04	3.4000E+00	4.0300E+04	3.4100E+00	1014	3
4.2400E+04	3.4300E+00	4.4500E+04	3.4400E+00	4.6800E+04	3.4600E+00	1014	3
4.9200E+04	3.5200E+00	5.1800E+04	3.6000E+00	5.4400E+04	3.7500E+00	1014	3
5.7200E+04	3.8200E+00	6.0100E+04	4.1800E+00	6.3200E+04	4.2300E+00	1014	3
6.6600E+04	4.9100E+00	6.9900E+04	5.9500E+00	7.3400E+04	8.7000E+00	1014	3
7.7200E+04	1.0500E+01	8.1200E+04	3.6500E+01	8.5300E+04	4.3000E+01	1014	3
8.9700E+04	2.3000E+01	9.4300E+04	1.1200E+01	9.9100E+04	8.4500E+00	1014	3
1.0420E+05	6.2500E+00	1.0960E+05	5.5000E+00	1.1500E+05	4.7500E+00	1014	3
1.2100E+05	4.4000E+00	1.2700E+05	4.2500E+00	1.3400E+05	4.0700E+00	1014	3
1.4100E+05	4.1000E+00	1.4800E+05	4.1800E+00	1.5500E+05	4.2100E+00	1014	3
1.6300E+05	4.3500E+00	1.7200E+05	4.5000E+00	1.8100E+05	4.7700E+00	1014	3
1.9000E+05	5.0500E+00	2.0000E+05	5.5500E+00	2.1000E+05	6.1000E+00	1014	3
2.2100E+05	6.9000E+00	2.3300E+05	8.1000E+00	2.4400E+05	9.4000E+00	1014	3
2.5700E+05	1.1200E+01	2.7000E+05	1.2750E+01	2.8400E+05	1.2000E+01	1014	3
2.9900E+05	1.0600E+01	3.1400E+05	8.8000E+00	3.3000E+05	7.5000E+00	1014	3
3.4700E+05	6.5000E+00	3.6500E+05	5.5000E+00	3.8300E+05	5.2700E+00	1014	3
4.0300E+05	6.1000E+00	4.2400E+05	1.0000E+01	4.4500E+05	1.1200E+01	1014	3
4.6800E+05	6.1000E+00	4.9200E+05	4.9500E+00	5.1800E+05	4.7000E+00	1014	3

5,4400E+05	4.7300E+00	5.7200E+05	4,8500E+00	5,0100E+05	4,2300E+00	1014	3	1	63
6,3200E+05	3,0500E+00	6,6600E+05	5,6700E+00	6,9900E+05	4,4000E+00	1014	3	1	64
7,3400E+05	4,5000E+00	7,7200E+05	3,7100E+00	8,1200E+05	3,8000E+00	1014	3	1	65
8,5300E+05	7,1000E+00	8,9700E+05	3,5000E+00	9,4300E+05	3,0600E+00	1014	3	1	66
9,9100E+05	2,5000E+00	1,0420E+06	3,0000E+00	1,0960E+06	1,8000E+00	1014	3	1	67
1,1500E+06	3,4000E+00	1,2100E+06	2,8300E+00	1,2700E+06	2,7500E+00	1014	3	1	68
1,3400E+06	5,5000E+00	1,4100E+06	2,7500E+00	1,4800E+06	2,5200E+00	1014	3	1	69
1,5500E+06	1,9000E+00	1,6300E+06	2,6500E+00	1,7200E+06	3,4500E+00	1014	3	1	70
1,8100E+06	2,5500E+00	1,9000E+06	2,7500E+00	2,0000E+06	3,0000E+00	1014	3	1	71
2,1000E+06	3,1000E+00	2,2100E+06	3,0100E+00	2,3200E+06	2,5200E+00	1014	3	1	72
2,3800E+06	2,2500E+00	2,4400E+06	2,0300E+00	2,4650E+06	1,9700E+00	1014	3	1	73
2,4850E+06	2,0500E+00	2,5400E+06	2,5000E+00	2,5600E+06	2,9000E+00	1014	3	1	74
2,6000E+06	3,0500E+00	2,6300E+06	3,3600E+00	2,6900E+06	2,7000E+00	1014	3	1	75
2,7500E+06	2,2900E+00	2,7800E+06	2,2400E+00	2,8300E+06	2,4600E+00	1014	3	1	76
2,8900E+06	2,1200E+00	2,9300E+06	2,0500E+00	2,9700E+06	2,0700E+00	1014	3	1	77
3,0200E+06	2,4000E+00	3,0500E+06	2,4500E+00	3,0650E+06	2,4300E+00	1014	3	1	78
3,1300E+06	1,8700E+00	3,1900E+06	1,4800E+00	3,2200E+06	1,4600E+00	1014	3	1	79
3,2450E+06	1,4500E+00	3,2900E+06	1,7100E+00	3,3400E+06	2,0200E+00	1014	3	1	80
3,3700E+06	2,0800E+00	3,3900E+06	2,0400E+00	3,4150E+06	1,9600E+00	1014	3	1	81
3,4600E+06	2,2000E+00	3,4900E+06	2,2700E+00	3,5200E+06	2,2200E+00	1014	3	1	82
3,6400E+06	1,9100E+00	3,7200E+06	1,7800E+00	3,8200E+06	1,6000E+00	1014	3	1	83
3,8800E+06	1,4500E+00	3,9250E+06	1,3300E+00	3,9500E+06	1,3600E+00	1014	3	1	84
4,0200E+06	1,7500E+00	4,1100E+06	2,0200E+00	4,1500E+06	2,0700E+00	1014	3	1	85
4,2000E+06	2,0900E+00	4,2300E+06	2,0700E+00	4,2800E+06	1,9500E+00	1014	3	1	86
4,3000E+06	1,9000E+00	4,3200E+06	1,9700E+00	4,3700E+06	2,4000E+00	1014	3	1	87
4,3850E+06	2,4400E+00	4,4000E+06	2,4000E+00	4,4400E+06	2,2000E+00	1014	3	1	88
4,5000E+06	1,9000E+00	4,5600E+06	1,7500E+00	4,6400E+06	2,0500E+00	1014	3	1	89
4,6700E+06	2,0900E+00	4,7400E+06	1,9500E+00	4,7650E+06	1,9300E+00	1014	3	1	90
4,8000E+06	2,0000E+00	4,8400E+06	2,1600E+00	4,8700E+06	2,2000E+00	1014	3	1	91
4,9100E+06	2,1000E+00	4,9600E+06	1,9500E+00	5,0000E+06	1,9200E+00	1014	3	1	92
5,0200E+06	1,9000E+00	5,0800E+06	2,0000E+00	5,1100E+06	2,0200E+00	1014	3	1	93
5,1600E+06	1,9500E+00	5,2400E+06	1,7700E+00	5,2600E+06	1,7500E+00	1014	3	1	94
5,4300E+06	1,8400E+00	5,5000E+06	1,8700E+00	5,6000E+06	1,9000E+00	1014	3	1	95
5,7000E+06	1,8800E+00	5,7800E+06	1,8300E+00	5,8800E+06	1,7200E+00	1014	3	1	96
6,0000E+06	1,5200E+00	6,0600E+06	1,3500E+00	6,1000E+06	1,3000E+00	1014	3	1	97
6,2000E+06	1,4500E+00	6,2400E+06	1,4500E+00	6,3000E+06	1,4000E+00	1014	3	1	98
6,3400E+06	1,4900E+00	6,4000E+06	1,6700E+00	6,4600E+06	1,7500E+00	1014	3	1	99
6,5400E+06	1,7000E+00	6,6300E+06	1,6500E+00	6,6800E+06	1,6600E+00	1014	3	1	100
6,7600E+06	1,8500E+00	6,8000E+06	1,8700E+00	6,8600E+06	1,8500E+00	1014	3	1	101
6,9700E+06	1,7100E+00	7,0000E+06	1,7000E+00	7,3300E+06	1,7000E+00	1014	3	1	102
7,4000E+06	1,7000E+00	7,6000E+06	1,6800E+00	7,7000E+06	1,6600E+00	1014	3	1	103
7,8000E+06	1,6500E+00	7,9200E+06	1,6300E+00	7,9600E+06	1,6500E+00	1014	3	1	104
8,0000E+06	1,7100E+00	8,1000E+06	1,8100E+00	8,1500E+06	1,9000E+00	1014	3	1	105
8,2000E+06	1,9100E+00	8,2400E+06	1,8700E+00	8,4000E+06	1,7300E+00	1014	3	1	106
8,5100E+06	1,7200E+00	8,9500E+06	1,6300E+00	9,4100E+06	1,6000E+00	1014	3	1	107
9,8900E+06	1,5800E+00	1,0400E+07	1,5800E+00	1,0900E+07	1,6000E+00	1014	3	1	108
1,1500E+07	1,6200E+00	1,2100E+07	1,6600E+00	1,2700E+07	1,6800E+00	1014	3	1	109
1,3300E+07	1,7200E+00	1,4000E+07	1,7500E+00	1,4750E+07	1,7500E+00	1014	3	1	110
1,5500E+07	1,7400E+00	1,6300E+07	1,7100E+00	1,7100E+07	1,6900E+00	1014	3	1	111
1,8000E+07	1,6600E+00					1014	3	1	112
0,0	0,0	0	0	0	0	1014	3	0	113
12000,0	2,4101E+01	0	0	0	0	1014	3	2	114
0,0	0,0	0	0	1		2341014	3	2	115
234	5					1014	3	2	116
1,0000E+03	3,4100E+00	1,5000E+00	3,4100E+00	2,0000E+00	3,4300E+00	1014	3	2	117
4,0000E+00	3,4600E+00	6,0000E+00	3,4800E+00	8,0000E+00	3,5000E+00	1014	3	2	118
9,9000E+03	3,5000E+00	1,0420E+04	3,4800E+00	1,0960E+04	3,4500E+00	1014	3	2	119
1,1500E+04	3,4200E+00	1,2100E+04	3,4000E+00	1,2700E+04	3,4200E+00	1014	3	2	120
1,3400E+04	3,4300E+00	1,4100E+04	3,4990E+00	1,4800E+04	3,5990E+00	1014	3	2	121
1,5500E+04	3,7490E+00	1,6300E+04	3,9290E+00	1,7200E+04	4,2289E+00	1014	3	2	122
1,8100E+04	4,6989E+00	1,9000E+04	5,5988E+00	2,0000E+04	8,5987E+00	1014	3	2	123
2,1000E+04	5,7985E+00	2,2100E+04	4,5979E+00	2,3300E+04	4,1132E+00	1014	3	2	124

2.4400E+04	3.7311E+00	2.5700E+04	3.6311E+00	2.7000E+04	3.5320E+00	01014	3	2	125
2.8400E+04	3.4825E+00	2.9900E+04	3.4629E+00	3.1400E+04	3.4133E+00	01014	3	2	126
3.3000E+04	3.3838E+00	3.4700E+04	3.3840E+00	3.6500E+04	3.3846E+00	01014	3	2	127
3.8300E+04	3.3849E+00	4.0300E+04	3.3951E+00	4.2400E+04	3.4156E+00	01014	3	2	128
4.4500E+04	3.4259E+00	4.6800E+04	3.4460E+00	4.9200E+04	3.5063E+00	01014	3	2	129
5.1800E+04	3.5867E+00	5.4400E+04	3.7370E+00	5.7200E+04	3.8072E+00	01014	3	2	130
6.0100E+04	4.1677E+00	6.3200E+04	4.2179E+00	6.6600E+04	4.8981E+00	01014	3	2	131
6.9900E+04	5.9383E+00	7.3400E+04	8.6886E+00	7.7200E+04	1.0489E+01	01014	3	2	132
8.1200E+04	3.6489E+01	8.5300E+04	4.2989E+01	9.9700E+04	2.2989E+01	01014	3	2	133
9.4300E+04	1.1190E+01	9.9100E+04	8.4399E+00	1.0420E+05	6.2400E+00	01014	3	2	134
1.0960E+05	5.4902E+00	1.1500E+05	4.7404E+00	1.2100E+05	4.3906E+00	01014	3	2	135
1.2700E+05	4.2406E+00	1.3400E+05	4.0608E+00	1.4100E+05	4.0910E+00	01014	3	2	136
1.4800E+05	4.1711E+00	1.5500E+05	4.2012E+00	1.6300E+05	4.3413E+00	01014	3	2	137
1.7200E+05	4.4913E+00	1.8100E+05	4.7614E+00	1.9000E+05	5.0414E+00	01014	3	2	138
2.0000E+05	5.5415E+00	2.1000E+05	6.0916E+00	2.2100E+05	6.8916E+00	01014	3	2	139
2.3300E+05	8.0917E+00	2.4400E+05	9.3917E+00	2.5700E+05	1.1192E+01	01014	3	2	140
2.7000E+05	1.2742E+01	2.8400E+05	1.1992E+01	2.9900E+05	1.0592E+01	01014	3	2	141
3.1400E+05	8.7920E+00	3.3000E+05	7.4920E+00	3.4700E+05	6.4920E+00	01014	3	2	142
3.6500E+05	5.4920E+00	3.8300E+05	5.2620E+00	4.0300E+05	6.0919E+00	01014	3	2	143
4.2400E+05	9.9919E+00	4.4500E+05	1.1192E+01	4.6800E+05	6.0915E+00	01014	3	2	144
4.9200E+05	4.9413E+00	5.1800E+05	4.6911E+00	5.4400E+05	4.7208E+00	01014	3	2	145
5.7200E+05	4.8406E+00	6.0100E+05	4.2202E+00	6.3200E+05	3.0400E+00	01014	3	2	146
6.6600E+05	5.6597E+00	6.9900E+05	4.3896E+00	7.3400E+05	4.4893E+00	01014	3	2	147
7.7200E+05	3.6991E+00	8.1200E+05	3.7890E+00	9.5300E+05	7.0890E+00	01014	3	2	148
8.9700E+05	3.4889E+00	9.4300E+05	3.0488E+00	9.9100E+05	2.4889E+00	01014	3	2	149
1.0420E+06	2.9890E+00	1.0960E+06	1.7890E+00	1.1500E+06	3.3893E+00	01014	3	2	150
1.2100E+06	2.8195E+00	1.2700E+06	2.7397E+00	1.3400E+06	5.4902E+00	01014	3	2	151
1.4100E+06	2.7386E+00	1.4800E+06	2.5072E+00	1.5500E+06	1.8855E+00	01014	3	2	152
1.6300E+06	2.6292E+00	1.7200E+06	3.4106E+00	1.8100E+06	2.4633E+00	01014	3	2	153
1.9000E+06	2.6268E+00	2.0000E+06	2.8343E+00	2.1000E+06	2.8868E+00	01014	3	2	154
2.2100E+06	2.7553E+00	2.3200E+06	2.2256E+00	2.3800E+06	1.9358E+00	01014	3	2	155
2.4400E+06	1.6960E+00	2.4650E+06	1.6281E+00	2.4850E+06	1.7011E+00	01014	3	2	156
2.5400E+06	2.1332E+00	2.5600E+06	2.5263E+00	2.6000E+06	2.6653E+00	01014	3	2	157
2.6300E+06	2.9674E+00	2.6900E+06	2.2915E+00	2.7500E+06	1.8656E+00	01014	3	2	158
2.7800E+06	1.8077E+00	2.8300E+06	2.0138E+00	2.8900E+06	1.6649E+00	01014	3	2	159
2.9300E+06	1.5880E+00	2.9700E+06	1.6020E+00	3.0200E+06	1.9211E+00	01014	3	2	160
3.0500E+06	1.9651E+00	3.0650E+06	1.9412E+00	3.1300E+06	1.3673E+00	01014	3	2	161
3.1900E+06	9.7030E-01	3.2200E+06	9.4740E-01	3.2450E+06	9.3440E-01	01014	3	2	162
3.2900E+06	1.1894E+00	3.3400E+06	1.4935E+00	3.3700E+06	1.5495E+00	01014	3	2	163
3.3900E+06	1.5066E+00	3.4150E+06	1.4236E+00	3.4600E+06	1.6576E+00	01014	3	2	164
3.4900E+06	1.7236E+00	3.5200E+06	1.6707E+00	3.6400E+06	1.3457E+00	01014	3	2	165
3.7200E+06	1.2078E+00	3.8200E+06	1.0178E+00	3.8800E+06	8.6180E-01	01014	3	2	166
3.9250E+06	7.3780E-01	3.9500E+06	7.6580E-01	4.0200E+06	1.1489E+00	01014	3	2	167
4.1100E+06	1.4158E+00	4.1500E+06	1.4648E+00	4.2000E+06	1.4838E+00	01014	3	2	168
4.2300E+06	1.4628E+00	4.2800E+06	1.3388E+00	4.3000E+06	1.2868E+00	01014	3	2	169
4.3200E+06	1.3558E+00	4.3700E+06	1.7817E+00	4.3850E+06	1.8197E+00	01014	3	2	170
4.4000E+06	1.7787E+00	4.4400E+06	1.5757E+00	4.5000E+06	1.2733E+00	01014	3	2	171
4.5600E+06	1.1209E+00	4.6400E+06	1.4174E+00	4.6700E+06	1.4562E+00	01014	3	2	172
4.7400E+06	1.3079E+00	4.7650E+06	1.2848E+00	4.8000E+06	1.3506E+00	01014	3	2	173
4.8400E+06	1.5054E+00	4.8700E+06	1.5422E+00	4.9100E+06	1.4370E+00	01014	3	2	174
4.9600E+06	1.2796E+00	5.0000E+06	1.2434E+00	5.0200E+06	1.2213E+00	01014	3	2	175
5.0800E+06	1.3118E+00	5.1100E+06	1.3276E+00	5.1600E+06	1.2502E+00	01014	3	2	176
5.2400E+06	1.0672E+00	5.2600E+06	1.0470E+00	5.4300E+06	1.1305E+00	01014	3	2	177
5.5000E+06	1.1573E+00	5.6000E+06	1.1835E+00	5.7000E+06	1.1584E+00	01014	3	2	178
5.7800E+06	1.1043E+00	5.8800E+06	9.8920E-01	6.0000E+06	7.8190E-01	01014	3	2	179
6.0600E+06	6.0640E-01	6.1000E+06	5.5150E-01	6.2000E+06	6.9160E-01	01014	3	2	180
6.2400E+06	6.8640E-01	6.3000E+06	6.2970E-01	6.3400E+06	7.1630E-01	01014	3	2	181
6.4000E+06	8.9130E-01	6.4600E+06	9.6710E-01	6.5400E+06	9.0890E-01	01014	3	2	182
6.6300E+06	8.5010E-01	6.6800E+06	8.5720E-01	6.7600E+06	1.0434E+00	01014	3	2	183
6.8000E+06	1.0608E+00	6.8600E+06	1.0372E+00	6.9700E+06	8.8880E-01	01014	3	2	184
7.0000E+06	8.7820E-01	7.3300E+06	8.5590E-01	7.4000E+06	8.5120E-01	01014	3	2	185
7.6000E+06	8.1270E-01	7.7000E+06	7.8190E-01	7.8000E+06	7.6600E-01	01014	3	2	186

7.9200E+06	7.3910E-01	7.9600E+06	7.5640E-01	8.0000E+06	8.1360E-01	1014	3	2	187
8.1000E+06	9.0700E-01	8.1500E+06	9.9650E-01	8.2000E+06	1.0060E+00	1014	3	2	188
8.2400E+06	9.6570E-01	8.4000E+06	8.2260E-01	8.5100E+06	8.0900E-01	1014	3	2	189
8.9500E+06	6.8560E-01	9.4100E+06	6.4560E-01	9.8900E+06	6.0260E-01	1014	3	2	190
1.0400E+07	5.9870E-01	1.0900E+07	6.0570E-01	1.1500E+07	6.2770E-01	1014	3	2	191
1.2100E+07	6.7770E-01	1.2700E+07	7.1180E-01	1.3300E+07	7.5980E-01	1014	3	2	192
1.4000E+07	7.9980E-01	1.4750E+07	8.1980E-01	1.5500E+07	8.3480E-01	1014	3	2	193
1.6300E+07	8.2980E-01	1.7100E+07	8.3290E-01	1.8000E+07	8.3390E-01	1014	3	2	194
0.0	0.0	0	0	0	0	1014	3	0	195
12000.0	2.4101E+01	0	99	0	0	1014	3	4	196
0.0	0.0	0	0	2	53	1014	3	4	197
2	2	53	5			1014	3	4	198
1.3400E+06	0.0000E+00	1.4100E+06	2.0000E-03	1.4800E+06	4.0000E-03	1014	3	4	199
1.5500E+06	6.0000E-03	1.6300E+06	1.3000E-02	1.7200E+06	3.2000E-02	1014	3	4	200
1.8100E+06	8.0000E-02	1.9000E+06	1.1700E-01	2.0000E+06	1.6000E-01	1014	3	4	201
2.1000E+06	2.0800E-01	2.2100E+06	2.5000E-01	2.3200E+06	2.9000E-01	1014	3	4	202
2.4400E+06	3.3000E-01	2.5600E+06	3.7000E-01	2.6900E+06	4.0500E-01	1014	3	4	203
2.8300E+06	4.4300E-01	2.9700E+06	4.6500E-01	3.1300E+06	5.0000E-01	1014	3	4	204
3.2900E+06	5.1800E-01	3.4600E+06	5.4000E-01	3.6400E+06	5.6200E-01	1014	3	4	205
3.8200E+06	5.8000E-01	4.0200E+06	5.9900E-01	4.2300E+06	6.0500E-01	1014	3	4	206
4.4400E+06	6.2200E-01	4.6700E+06	6.3000E-01	4.9100E+06	6.5800E-01	1014	3	4	207
5.1600E+06	6.9300E-01	5.4300E+06	6.9900E-01	5.7000E+06	7.0600E-01	1014	3	4	208
6.0000E+06	7.1300E-01	6.3000E+06	7.3000E-01	6.6300E+06	7.3500E-01	1014	3	4	209
6.9700E+06	7.2500E-01	7.3300E+06	6.9500E-01	7.7000E+06	6.7500E-01	1014	3	4	210
8.1000E+06	6.5500E-01	8.5100E+06	6.1900E-01	8.9500E+06	5.9500E-01	1014	3	4	211
9.4100E+06	5.5700E-01	9.8900E+06	5.2700E-01	1.0400E+07	4.8000E-01	1014	3	4	212
1.0900E+07	4.5500E-01	1.1500E+07	4.1000E-01	1.2100E+07	3.7400E-01	1014	3	4	213
1.2700E+07	3.5000E-01	1.3300E+07	3.4800E-01	1.4000E+07	3.6200E-01	1014	3	4	214
1.4750E+07	3.8600E-01	1.5500E+07	4.2000E-01	1.6300E+07	4.5400E-01	1014	3	4	215
1.7100E+07	4.3900E-01	1.8000E+07	4.2100E-01			1014	3	4	216
0.0	0.0	0	0	0	0	1014	3	0	217
12000.0	2.4101E+01	0	0	0	0	1014	3	16	218
0.0	-7.3310E+06	0	0	2	3	1014	3	16	219
2	2	3	5			1014	3	16	220
1.6300E+07	0.0000E+00	1.7100E+07	3.3000E-02	1.8000E+07	5.3000E-02	1014	3	16	221
0.0	0.0	0	0	0	0	1014	3	0	222
12000.0	2.4101E+01	0	0	0	0	1014	3	102	223
0.0	1.1097E+07	0	0	1	154	1014	3	102	224
154	5					1014	3	102	225
1.0000E-03	3.6700E-01	1.5000E+00	9.4800E-03	2.0000E+00	8.2100E-03	1014	3	102	226
4.0000E+00	5.8100E-03	6.0000E+00	4.7400E-03	8.0000E+00	4.1100E-03	1014	3	102	227
1.0000E+01	3.6700E-03	4.0000E+01	1.8400E-03	1.0000E+02	1.1600E-03	1014	3	102	228
1.3500E+02	1.0000E-03	1.4100E+04	1.0000E-03	1.4800E+04	1.0100E-03	1014	3	102	229
1.5500E+04	1.0100E-03	1.6300E+04	1.0200E-03	1.7200E+04	1.0500E-03	1014	3	102	230
1.8100E+04	1.1000E-03	1.9000E+04	1.1800E-03	2.0000E+04	1.2800E-03	1014	3	102	231
2.1000E+04	1.5000E-03	2.2100E+04	2.1000E-03	2.3300E+04	6.7900E-03	1014	3	102	232
2.4400E+04	1.8900E-02	2.5700E+04	1.8900E-02	2.7000E+04	1.8000E-02	1014	3	102	233
2.8400E+04	1.7500E-02	2.9900E+04	1.7100E-02	3.1400E+04	1.6700E-02	1014	3	102	234
3.3000E+04	1.6200E-02	3.4700E+04	1.6000E-02	3.6500E+04	1.5400E-02	1014	3	102	235
3.8300E+04	1.5100E-02	4.0300E+04	1.4900E-02	4.2400E+04	1.4400E-02	1014	3	102	236
4.4500E+04	1.4100E-02	4.6800E+04	1.4000E-02	4.9200E+04	1.3700E-02	1014	3	102	237
5.1800E+04	1.3300E-02	5.4400E+04	1.3000E-02	5.7200E+04	1.2800E-02	1014	3	102	238
6.0100E+04	1.2300E-02	6.3200E+04	1.2100E-02	6.6600E+04	1.1900E-02	1014	3	102	239
6.9900E+04	1.1700E-02	7.3400E+04	1.1400E-02	7.7200E+04	1.1200E-02	1014	3	102	240
8.1200E+04	1.1000E-02	8.5300E+04	1.0800E-02	8.9700E+04	1.0500E-02	1014	3	102	241
9.4300E+04	1.0300E-02	9.9100E+04	1.0100E-02	1.0420E+05	9.9500E-03	1014	3	102	242
1.0960E+05	9.7800E-03	1.1500E+05	9.6000E-03	1.2100E+05	9.4000E-03	1014	3	102	243
1.2700E+05	9.3700E-03	1.3400E+05	9.1500E-03	1.4100E+05	9.0000E-03	1014	3	102	244
1.4800E+05	8.9000E-03	1.5500E+05	8.8000E-03	1.6300E+05	8.7000E-03	1014	3	102	245
1.7200E+05	8.6500E-03	1.8100E+05	8.6000E-03	1.9000E+05	8.5500E-03	1014	3	102	246
2.0000E+05	8.4700E-03	2.1000E+05	8.4000E-03	2.2100E+05	8.3500E-03	1014	3	102	247
2.3300E+05	8.3000E-03	2.4400E+05	8.2500E-03	2.5700E+05	8.2000E-03	1014	3	102	248

2.7000E+05	8.1500E-03	2.8400E+05	8.1000E-03	2.9900E+05	8.0500E-03	1014	3102	249
3.1400E+05	8.0200E-03	3.3000E+05	8.0100E-03	3.4700E+05	8.0000E-03	1014	3102	250
3.6500E+05	8.0000E-03	3.8300E+05	8.0200E-03	4.0300E+05	8.0800E-03	1014	3102	251
4.2400E+05	8.1200E-03	4.4500E+05	8.4000E-03	4.6800E+05	8.5000E-03	1014	3102	252
4.9200E+05	8.7000E-03	5.1800E+05	8.8500E-03	5.4400E+05	9.1500E-03	1014	3102	253
5.7200E+05	9.3500E-03	6.0100E+05	9.7700E-03	6.3200E+05	1.0000E-02	1014	3102	254
6.6600E+05	1.0300E-02	6.9900E+05	1.0400E-02	7.3400E+05	1.0700E-02	1014	3102	255
7.7200E+05	1.0900E-02	8.1200E+05	1.1000E-02	8.5300E+05	1.1000E-02	1014	3102	256
8.9700E+05	1.1100E-02	9.4300E+05	1.1200E-02	9.9100E+05	1.1100E-02	1014	3102	257
1.0420E+06	1.1000E-02	1.0960E+06	1.1000E-02	1.1500E+06	1.0700E-02	1014	3102	258
1.2100E+06	1.0500E-02	1.2700E+06	1.0300E-02	1.3400E+06	9.8000E-03	1014	3102	259
1.4100E+06	9.4000E-03	1.4800E+06	8.8500E-03	1.5500E+06	8.5000E-03	1014	3102	260
1.6300E+06	7.8000E-03	1.7200E+06	7.4000E-03	1.8100E+06	6.7000E-03	1014	3102	261
1.9000E+06	6.2500E-03	2.0000E+06	5.6800E-03	2.1000E+06	5.2000E-03	1014	3102	262
2.2100E+06	4.7500E-03	2.3200E+06	4.4500E-03	2.4400E+06	4.0000E-03	1014	3102	263
2.5600E+06	3.7500E-03	2.6900E+06	3.4500E-03	2.8300E+06	3.1700E-03	1014	3102	264
2.9700E+06	2.9200E-03	3.1300E+06	2.6600E-03	3.2900E+06	2.4500E-03	1014	3102	265
3.4600E+06	2.2400E-03	3.6400E+06	2.0500E-03	3.8200E+06	1.9000E-03	1014	3102	266
4.0200E+06	1.7400E-03	4.2300E+06	1.6000E-03	4.4400E+06	1.4800E-03	1014	3102	267
4.6700E+06	1.3500E-03	4.9100E+06	1.2200E-03	5.1600E+06	1.1400E-03	1014	3102	268
5.4300E+06	1.0400E-03	5.7000E+06	9.6000E-04	6.0000E+06	8.8000E-04	1014	3102	269
6.3000E+06	8.1500E-04	6.6300E+06	7.3500E-04	6.9700E+06	6.8500E-04	1014	3102	270
7.3300E+06	6.3000E-04	7.7000E+06	5.7000E-04	8.1000E+06	5.3000E-04	1014	3102	271
8.5100E+06	4.8500E-04	8.9500E+06	4.4800E-04	9.4100E+06	4.2500E-04	1014	3102	272
9.8900E+06	3.7600E-04	1.0400E+07	3.4200E-04	1.0900E+07	3.2000E-04	1014	3102	273
1.1500E+07	2.9000E-04	1.2100E+07	2.6500E-04	1.2700E+07	2.5000E-04	1014	3102	274
1.3300E+07	2.2500E-04	1.4000E+07	2.0800E-04	1.4750E+07	1.9200E-04	1014	3102	275
1.5500E+07	1.7700E-04	1.6300E+07	1.6200E-04	1.7100E+07	1.4900E-04	1014	3102	276
1.8000E+07	1.3700E-04					1014	3102	277
0.0	0.0	0	0	0		01014	3	0 278
12000.0	2.4101E+01	0	0	0		01014	3103	279
0.0	-3.0220E+06	0	0	2		291014	3103	280
2	2	29	5			1014	3103	281
4.4400E+06	0.0000E+00	4.6700E+06	1.2000E-03	4.9100E+06	1.9000E-03	1014	3103	282
5.1600E+06	2.6000E-03	5.4300E+06	4.5000E-03	5.7000E+06	6.3500E-03	1014	3103	283
6.0000E+06	9.2000E-03	6.3000E+06	1.3800E-02	6.6300E+06	2.0000E-02	1014	3103	284
6.9700E+06	2.7000E-02	7.3300E+06	3.8500E-02	7.7000E+06	5.4500E-02	1014	3103	285
8.1000E+06	7.1500E-02	8.5100E+06	8.4500E-02	8.9500E+06	1.0300E-01	1014	3103	286
9.4100E+06	1.2400E-01	9.8900E+06	1.4400E-01	1.0400E+07	1.6100E-01	1014	3103	287
1.0900E+07	1.7800E-01	1.1500E+07	1.9700E-01	1.2100E+07	2.1000E-01	1014	3103	288
1.2700E+07	2.1600E-01	1.3300E+07	2.1400E-01	1.4000E+07	2.0400E-01	1014	3103	289
1.4750E+07	1.8400E-01	1.5500E+07	1.5500E-01	1.6300E+07	1.2800E-01	1014	3103	290
1.7100E+07	1.1800E-01	1.8000E+07	1.1300E-01			1014	3103	291
0.0	0.0	0	0	0		01014	3	0 292
12000.0	2.4101E+01	0	0	0		01014	3107	293
0.0	4.8100E+05	0	0	2		401014	3107	294
2	2	40	5			1014	3107	295
2.5600E+06	0.0000E+00	2.6900E+06	3.3000E-05	2.8300E+06	4.5000E-05	1014	3107	296
2.9700E+06	5.4000E-05	3.1300E+06	7.5000E-05	3.2900E+06	1.0500E-04	1014	3107	297
3.4600E+06	1.4000E-04	3.6400E+06	2.1500E-04	3.8200E+06	2.8500E-04	1014	3107	298
4.0200E+06	4.1000E-04	4.2300E+06	6.0000E-04	4.4400E+06	8.5000E-04	1014	3107	299
4.6700E+06	1.2300E-03	4.9100E+06	1.9300E-03	5.1600E+06	3.1000E-03	1014	3107	300
5.4300E+06	5.0000E-03	5.7000E+06	8.3000E-03	6.0000E+06	1.5000E-02	1014	3107	301
6.3000E+06	2.5700E-02	6.6300E+06	4.4200E-02	6.9700E+06	6.8500E-02	1014	3107	302
7.3300E+06	1.1000E-01	7.7000E+06	1.4800E-01	8.1000E+06	1.7600E-01	1014	3107	303
8.5100E+06	2.0700E-01	8.9500E+06	2.4600E-01	9.4100E+06	2.7300E-01	1014	3107	304
9.8900E+06	3.0600E-01	1.0400E+07	3.4000E-01	1.0900E+07	3.6100E-01	1014	3107	305
1.1500E+07	3.8500E-01	1.2100E+07	3.9800E-01	1.2700E+07	4.0200E-01	1014	3107	306
1.3300E+07	3.9800E-01	1.4000E+07	3.8400E-01	1.4750E+07	3.6000E-01	1014	3107	307
1.5500E+07	3.3000E-01	1.6300E+07	2.9800E-01	1.7100E+07	2.6700E-01	1014	3107	308
1.8000E+07	2.3900E-01					1014	3107	309
0.0	0.0	0	0	0		01014	3	0 310

12000.0	2.4101E+01	0	0	0	01014	3251	311
0.0	0.0	0	0	1	331014	3251	312
33	3				1014	3251	313
1.0000E+03	2.7661E+02	1.4800E+02	2.7661E+02	1.1500E+03	2.3666E+02	1014	3251
4.0300E+03	1.4647E+02	9.9100E+03	2.3630E+03	2.9900E+04	6.7489E+02	1014	3251
5.1800E+04	8.4570E+03	6.9900E+04	5.3910E+03	1.0420E+05	1.7663E+02	1014	3251
1.4800E+05	3.4176E+02	2.0000E+05	5.8924E+02	2.5700E+05	1.0753E+01	1014	3251
3.3000E+05	1.7815E+01	4.6800E+05	3.5757E+01	5.4400E+05	4.1479E+01	1014	3251
6.3200E+05	3.7026E+01	7.7200E+05	3.2740E+01	8.9700E+05	4.0154E+01	1014	3251
9.9100E+05	4.0796E+01	1.0960E+06	3.2700E+01	1.3400E+06	2.9478E+01	1014	3251
2.0000E+06	3.1157E+01	2.9700E+06	3.4042E+01	4.0200E+06	3.7263E+01	1014	3251
4.6700E+06	4.1234E+01	5.4300E+06	5.1343E+01	6.0000E+06	5.7638E+01	1014	3251
6.9700E+06	6.2340E+01	8.1000E+06	6.2556E+01	8.9500E+06	6.3785E+01	1014	3251
9.8900E+06	6.5602E+01	1.4000E+07	7.3565E+01	1.8000E+07	7.9564E+01	1014	3251
0.0	0.0	0	0	0	01014	3	0
12000.0	2.4101E+01	0	0	0	01014	3252	326
0.0	0.0	0	0	1	331014	3252	327
33	3				1014	3252	328
1.0000E+03	8.0735E+02	1.4800E+02	8.0735E+02	1.1500E+03	8.1067E+02	1014	3252
4.0300E+03	8.1815E+02	9.9100E+03	8.3228E+02	2.9900E+04	8.8637E+02	1014	3252
5.1800E+04	8.3737E+02	6.9900E+04	8.2588E+02	1.0420E+05	8.1568E+02	1014	3252
1.4800E+05	8.0196E+02	2.0000E+05	7.8140E+02	2.5700E+05	7.4102E+02	1014	3252
3.3000E+05	6.8238E+02	4.6800E+05	5.3346E+02	5.4400E+05	4.8595E+02	1014	3252
6.3200E+05	5.2293E+02	7.7200E+05	5.5849E+02	8.9700E+05	4.9695E+02	1014	3252
9.9100E+05	4.9160E+02	1.0960E+06	5.5883E+02	1.3400E+06	5.8558E+02	1014	3252
2.0000E+06	5.7166E+02	2.9700E+06	5.4777E+02	4.0200E+06	5.2108E+02	1014	3252
4.6700E+06	4.8813E+02	5.4300E+06	4.0429E+02	6.0000E+06	3.5224E+02	1014	3252
6.9700E+06	3.1368E+02	8.1000E+06	3.1243E+02	8.9500E+06	3.0263E+02	1014	3252
9.8900E+06	2.8794E+02	1.4000E+07	2.2244E+02	1.8000E+07	1.7365E+02	1014	3252
0.0	0.0	0	0	0	01014	3	0
12000.0	2.4101E+01	0	0	0	01014	3253	341
0.0	0.0	0	0	1	331014	3253	342
33	3				1014	3253	343
1.0000E+03	5.4580E+02	1.4800E+02	5.4580E+02	1.1500E+03	5.4691E+02	1014	3253
4.0300E+03	5.4966E+02	9.9100E+03	5.5446E+02	2.9900E+04	5.7227E+02	1014	3253
5.1800E+04	5.7688E+02	6.9900E+04	5.7493E+02	1.0420E+05	5.6904E+02	1014	3253
1.4800E+05	5.5935E+02	2.0000E+05	5.4436E+02	2.5700E+05	5.2211E+02	1014	3253
3.3000E+05	5.0056E+02	4.6800E+05	4.8077E+02	5.4400E+05	4.6020E+02	1014	3253
6.3200E+05	4.7875E+02	7.7200E+05	4.6927E+02	8.9700E+05	4.5606E+02	1014	3253
9.9100E+05	4.2801E+02	1.0960E+06	4.7533E+02	1.3400E+06	4.8035E+02	1014	3253
2.0000E+06	4.8957E+02	2.9700E+06	5.0767E+02	4.0200E+06	5.0435E+02	1014	3253
4.6700E+06	4.8823E+02	5.4300E+06	4.5996E+02	6.0000E+06	4.5870E+02	1014	3253
6.9700E+06	4.5417E+02	8.1000E+06	4.6691E+02	8.9500E+06	4.5957E+02	1014	3253
9.8900E+06	4.4860E+02	1.4000E+07	3.6485E+02	1.8000E+07	3.0480E+02	1014	3253
0.0	0.0	0	0	0	01014	3	0
0.0	0.0	0	0	0	01014	0	0
12000.0	2.4101E+01	1	1	0	01014	4	2
0.0	2.4101E+01	0	2	121	101014	4	2
1.0000E+00	2.7660E+02	3.4000E+04	0.0000E+00	0.0000E+00	0.0000E+00	101014	4
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	101014	4
9.9897E+01	4.9770E+02	1.1800E+03	1.0000E+05	0.0000E+00	0.0000E+00	101014	4
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	2.7620E+02	101014	4
9.9730E+01	7.1030E+02	2.4600E+03	5.0000E+05	0.0000E+00	0.0000E+00	101014	4
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1.0300E+03	4.9660E+02	101014	4
9.9473E+01	9.1960E+02	4.1700E+03	1.2000E+04	0.0000E+00	0.0000E+00	101014	4
0.0000E+00	0.0000E+00	0.0000E+00	4.0000E+05	2.3500E+03	7.0820E+02	101014	4
9.9130E+01	1.1267E+01	6.3000E+03	2.2000E+04	1.0000E+05	0.0000E+00	101014	4
0.0000E+00	0.0000E+00	0.0000E+00	1.1000E+04	4.0800E+03	9.1600E+02	101014	4
9.8702E+01	1.3318E+01	8.8600E+03	3.8000E+04	1.0000E+05	0.0000E+00	101014	4
0.0000E+00	0.0000E+00	0.0000E+00	2.2000E+04	6.2200E+03	1.1213E+01	101014	4
9.8189E+01	1.5350E+01	1.1840E+02	5.9000E+04	2.0000E+05	0.0000E+00	101014	4
0.0000E+00	0.0000E+00	1.0000E+05	3.7000E+04	8.7800E+03	1.3243E+01	101014	4

9.7593E-01	1.7361E-01	1.5230E-01	8.7000E-04	0.0000E+00	0.0000E+00	1014	4	2	373
0.0000E+00	0.0000E+00	2.0000E-05	-5.8000E-04	1.1750E-02	-1.5251E-01	1014	4	2	374
9.6914E-01	1.9350E-01	1.9030E-02	0.0000E+00	0.0000E+00	0.0000E+00	1014	4	2	375
0.0000E+00	0.0000E+00	4.0000E-05	-8.6000E-04	1.5120E-02	-1.7234E-01	1014	4	2	376
9.6152E-01	2.1315E-01	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1014	4	2	377
0.0000E+00	0.0000E+00	6.0000E-05	-1.2100E-03	1.8890E-02	-1.9191E-01	1014	4	2	378
9.5310E-01						1014	4	2	379
0.0	0.0	0	0	1	33	1014	4	2	380
33	3					1014	4	2	381
0.0	1.0000E-03	0	0	1	0	1014	4	2	382
0.0000E+00						1014	4	2	383
0.0	1.4800E+02	0	0	1	0	1014	4	2	384
0.0000E+00						1014	4	2	385
0.0	1.1500E+03	0	0	1	0	1014	4	2	386
-4.0000E-03						1014	4	2	387
0.0	4.0300E+03	0	0	2	0	1014	4	2	388
-1.3000E-02	1.0000E-03					1014	4	2	389
0.0	9.9100E+03	0	0	2	0	1014	4	2	390
-3.0000E-02	2.0000E-03					1014	4	2	391
0.0	2.9900E+04	0	0	2	0	1014	4	2	392
-9.5000E-02	9.0000E-03					1014	4	2	393
0.0	5.1800E+04	0	0	2	0	1014	4	2	394
-3.4000E-02	7.8000E-02					1014	4	2	395
0.0	6.9900E+04	0	0	2	0	1014	4	2	396
-2.0000E-02	8.3000E-02					1014	4	2	397
0.0	1.0420E+05	0	0	3	0	1014	4	2	398
-8.0000E-03	7.3000E-02	4.0000E-03				1014	4	2	399
0.0	1.4800E+05	0	0	3	0	1014	4	2	400
8.0000E-03	5.4000E-02	6.0000E-03				1014	4	2	401
0.0	2.0000E+05	0	0	3	0	1014	4	2	402
3.2000E-02	2.6000E-02	6.0000E-03				1014	4	2	403
0.0	2.5700E+05	0	0	3	0	1014	4	2	404
8.0000E-02	2.0000E-03	5.0000E-03				1014	4	2	405
0.0	3.3000E+05	0	0	3	0	1014	4	2	406
1.5100E-01	1.3000E-02	2.0000E-03				1014	4	2	407
0.0	4.6800E+05	0	0	3	0	1014	4	2	408
3.3500E-01	1.7200E-01	0.0000E+00				1014	4	2	409
0.0	5.4400E+05	0	0	3	0	1014	4	2	410
3.9300E-01	1.9800E-01	1.0000E-03				1014	4	2	411
0.0	6.3200E+05	0	0	3	0	1014	4	2	412
3.4800E-01	1.8300E-01	4.0000E-03				1014	4	2	413
0.0	7.7200E+05	0	0	3	0	1014	4	2	414
3.0300E-01	1.0800E-01	1.3000E-02				1014	4	2	415
0.0	8.9700E+05	0	0	3	0	1014	4	2	416
3.7900E-01	1.7300E-01	2.2000E-02				1014	4	2	417
0.0	9.9100E+05	0	0	3	0	1014	4	2	418
3.8400E-01	1.2100E-01	1.6000E-02				1014	4	2	419
0.0	1.0960E+06	0	0	4	0	1014	4	2	420
3.0300E-01	1.2200E-01	8.0000E-03	1.0000E-03			1014	4	2	421
0.0	1.3400E+06	0	0	4	0	1014	4	2	422
2.7000E-01	9.5000E-02	7.0000E-03	1.0000E-03			1014	4	2	423
0.0	2.0000E+06	0	0	4	0	1014	4	2	424
2.8800E-01	1.3900E-01	2.0000E-02	5.0000E-03			1014	4	2	425
0.0	2.0700E+06	0	0	4	0	1014	4	2	426
3.1900E-01	2.1700E-01	3.5000E-02	1.8000E-02			1014	4	2	427
0.0	4.0200E+06	0	0	6	0	1014	4	2	428
3.5200E-01	2.4700E-01	6.8000E-02	4.0000E-02	0.0000E+00	-2.0000E-03	1014	4	2	429
0.0	4.6700E+06	0	0	6	0	1014	4	2	430
3.9200E-01	2.6000E-01	1.1800E-01	5.7000E-02	0.0000E+00	-6.0000E-03	1014	4	2	431
0.0	5.4300E+06	0	0	6	0	1014	4	2	432
4.9500E-01	3.3400E-01	1.9600E-01	9.0000E-02	1.3000E-02	-7.0000E-03	1014	4	2	433
0.0	6.0000E+06	0	0	7	0	1014	4	2	434

5.6000E-01	4.1500E-01	2.3800E-01	1.3600E-01	4.0000E-02	3.0000E-03	1014	4	2	435
2.0000E-03						1014	4	2	436
0.0	6.9700E+06	0	0	8		01014	4	2	437
6.0800E-01	4.7200E-01	3.0100E-01	2.3500E-01	1.0900E-01	2.8000E-02	1014	4	2	438
1.3000E-02	1.0000E-03					1014	4	2	439
0.0	8.1000E+06	0	0	8		01014	4	2	440
6.1000E-01	4.9400E-01	3.5500E-01	3.0100E-01	1.7300E-01	6.5000E-02	1014	4	2	441
3.7000E-02	6.0000E-03					1014	4	2	442
0.0	8.9500E+06	0	0	8		01014	4	2	443
6.2200E-01	5.0100E-01	3.9000E-01	3.3000E-01	2.1900E-01	9.8000E-02	1014	4	2	444
5.1000E-02	1.1000E-02					1014	4	2	445
0.0	9.8900E+06	0	0	9		01014	4	2	446
6.4000E-01	5.1100E-01	4.0800E-01	3.5100E-01	2.6700E-01	1.3000E-01	1014	4	2	447
6.6000E-02	1.7000E-02	1.0000E-03				1014	4	2	448
0.0	1.4000E+07	0	0	10		01014	4	2	449
7.1978E-01	5.3606E-01	4.3131E-01	3.6565E-01	2.9247E-01	1.8071E-01	1014	4	2	450
8.3800E-02	2.5840E-02	6.1300E-03	1.3400E-03			1014	4	2	451
0.0	1.8000E+07	0	0	10		01014	4	2	452
7.8019E-01	5.8839E-01	4.6412E-01	3.8753E-01	3.1505E-01	2.2984E-01	1014	4	2	453
1.2725E-01	5.2470E-02	1.7600E-02	5.1100E-03			1014	4	2	454
0.0	0.0	0	0	0		01014	4	0	455
0.0	0.0	0	0	0		01014	0	0	456
12000.0	2.4101E+01	0	0	5		01014	5	4	457
0.0	1.3400E+06	0	3	1		11014	5	4	458
11	3					1014	5	4	459
1.3400E+06	1.0000E+00	4.0200E+06	1.0000E+00	4.2300E+06	9.9590E-01	1014	5	4	460
4.4400E+06	9.7830E-01	4.6700E+06	9.4480E-01	4.9100E+06	8.6690E-01	1014	5	4	461
5.1600E+06	7.9940E-01	5.4300E+06	7.5150E-01	5.7000E+06	7.0110E-01	1014	5	4	462
6.0000E+06	6.4370E-01	6.3000E+06	0.0000E+00			1014	5	4	463
0.0	4.0200E+06	0	3	1		101014	5	4	464
10	3					1014	5	4	465
4.0200E+06	0.0000E+00	4.2300E+06	4.1000E-03	4.4400E+06	1.6600E-02	1014	5	4	466
4.6700E+06	3.6500E-02	4.9100E+06	5.1000E-02	5.1600E+06	6.0600E-02	1014	5	4	467
5.4300E+06	7.5900E-02	5.7000E+06	8.9200E-02	6.0000E+06	1.0520E-01	1014	5	4	468
6.3000E+06	0.0000E+00					1014	5	4	469
0.0	4.2300E+06	0	3	1		91014	5	4	470
9	3					1014	5	4	471
4.2300E+06	0.0000E+00	4.4400E+06	5.1000E-03	4.6700E+06	1.8700E-02	1014	5	4	472
4.9100E+06	8.2100E-02	5.1600E+06	1.4000E-01	5.4300E+06	1.7030E-01	1014	5	4	473
5.7000E+06	1.9550E-01	6.0000E+06	2.0760E-01	5.3000E+06	0.0000E+00	1014	5	4	474
0.0	5.1600E+06	0	3	1		51014	5	4	475
5	3					1014	5	4	476
5.1600E+06	0.0000E+00	5.4300E+06	2.3000E-03	5.7000E+06	1.4200E-02	1014	5	4	477
6.0000E+06	4.3500E-02	6.3000E+06	0.0000E+00			1014	5	4	478
0.0	0.0	0	9	1		31014	5	4	479
3	3					1014	5	4	480
6.0000E+06	0.0000E+00	6.3000E+06	1.0000E+00	1.8000E+07	1.0000E+00	1014	5	4	481
0.0	0.0	0	0	1		61014	5	4	482
6	2					1014	5	4	483
6.0000E+06	1.4200E+06	9.5000E+06	1.7700E+06	1.0000E+07	1.7800E+06	1014	5	4	484
1.0500E+07	1.7300E+06	1.4000E+07	1.0000E+06	1.8000E+07	5.0000E+05	1014	5	4	485
0.0	0.0	0	0	0		01014	5	0	486
12000.0	2.4101E+01	0	0	1		01014	5	16	487
0.0	0.0	0	9	1		21014	5	16	488
2	2					1014	5	16	489
1.6300E+07	1.0000E+00	1.8000E+07	1.0000E+00			1014	5	16	490
0.0	0.0	0	0	1		21014	5	16	491
2	2					1014	5	16	492
1.6300E+07	1.0000E+05	1.8000E+07	5.9500E+05			1014	5	16	493
0.0	0.0	0	0	0		01014	5	0	494
0.0	0.0	0	0	0		01014	0	0	495
12000.0	2.4101E+01	0	0	0		01014	7	4	496

0.0	0.0	0	0	12	11014	7	4	497
0.00000E+00	5.9300E+01	2.4101E+01	1.5000E+00	0.0	0.01014	7	4	498
1.0000E+00	3.4100E+00	2.4101E+01	0.0	0.0	0.01014	7	4	499
0.0	0.0	0	0	0	01014	7	0	500
0.0	0.0	0	0	0	01014	0	0	501
0.0	0.0	0	0	0	0	0	0	502

APPENDIX B
ENDF/B Listing for Titanium

22000.0	4.7468E+01	0	0	0	01016	1451	1
0.0	0.0	0	0	44	01016	1451	2
TITANIUM CROSS SECTIONS MATERIAL 1016					1016	1451	3
THIS EVALUATION IS BASED PRIMARILY ON UNC-5002 BY N. TRALLI ET AL.					1016	1451	4
AND THE MODIFICATION OF THE UNC-5002 DATA GIVEN IN AWR 0-77/64,					1016	1451	5
WHICH IS ALSO IN ENDF/A.					1016	1451	6
THIS DATA WAS PREPARED BY E. PENNINGTON, A.N.L., IN SEPTEMBER 1966.					1016	1451	7
REVISIONS OF SOME FILE 3 DATA WERE MADE IN JUNE 1967.					1016	1451	8
THE FOLLOWING MODIFICATIONS WERE MADE OF THE DATA FROM THE PRIMARY					1016	1451	9
SOURCES-					1016	1451	10
A 1/V CAPTURE CROSS SECTION WITH A VALUE OF 5.1 BARNS AT 0.0253					1016	1451	11
EV., AS IN BNL-325, SUPPLEMENT 2, VOL. IIA (REF. 1), WAS ASSUMED UP					1016	1451	12
TO 100 EV. FROM 100 EV. TO 22.5 KEV., THE CAPTURE CROSS SECTION					1016	1451	13
WAS CALCULATED FROM THE HEAVY-TYPE RESONANCE PARAMETERS IN REF. 1					1016	1451	14
WITH AN ASSUMED GAMMA GAMMA OF 0.75 EV., ALONG WITH THE 1/V					1016	1451	15
CONTRIBUTION NECESSARY TO GIVE AGREEMENT AT 0.0253 EV. THE 4.18					1016	1451	16
KEV. RESONANCE IN TI-48 WAS OMITTED IN THESE CALCULATIONS AS ITS					1016	1451	17
PARAMETERS DO NOT AGREE WITH THE TOTAL CROSS SECTION CURVE IN					1016	1451	18
REF. 1. FROM 22.5 KEV. TO ALMOST 1 MEV., THE CAPTURE CROSS SECTION					1016	1451	19
WAS READ FROM THE GRAPH ON P. 22-0-7 OF REF. 1. AT HIGHER ENERGIES					1016	1451	20
THE UNC-5002 VALUES WERE USED. IN THE REGION OF THE RESONANCE					1016	1451	21
PARAMETER CALCULATIONS, THE CAPTURE CROSS SECTION IS IN GENERAL					1016	1451	22
QUITE DIFFERENT FROM THAT IN UNC-5002. THE UNC-5002 VALUES ARE					1016	1451	23
BASED ON OLD RESONANCE PARAMETERS WHICH HAVE BEEN GREATLY					1016	1451	24
REVISED.					1016	1451	25
THE TOTAL CROSS SECTION UP TO 100 EV. WAS OBTAINED BY ADDING THE					1016	1451	26
SCATTERING CROSS SECTION FROM UNC-5002 TO THE CAPTURE CROSS					1016	1451	27
SECTION, EXCEPT THAT THE SCATTERING CROSS SECTION WAS ASSUMED					1016	1451	28
CONSTANT AT 4.13 BARNS BELOW 1.5 EV. FROM 100 EV. TO 2.5 KEV. THE					1016	1451	29
UNC-5002 TOTAL CROSS SECTION WAS USED. FROM 2.5 KEV. TO ALMOST					1016	1451	30
220 KEV., VALUES OF SIGMA TOTAL WERE READ FROM THE GRAPHS ON P.					1016	1451	31
22-0-2, 22-0-3 AND 22-0-4 OF REF. 1. THE UNC-5002 VALUES WERE USED					1016	1451	32
ABOVE 220 KEV., EXCEPT IN THE REGION OF 2.4 TO 15 MEV. WHERE					1016	1451	33
VALUES WERE READ FROM THE FIGURES ON P. 22-0-5 OF REF. 1.					1016	1451	34
ABOVE 100 EV., THE SCATTERING CROSS SECTION WAS OBTAINED BY					1016	1451	35
SUBTRACTING OTHER CROSS SECTIONS FROM SIGMA TOTAL,					1016	1451	36
VALUES OF MU BAR LAB, XI, AND GAMMA WERE CALCULATED FROM THE					1016	1451	37
LEGENDRE EXPANSION COEFFICIENTS.					1016	1451	38
NEW LEGENDRE COEFFICIENTS WERE CALCULATED AT 14.0 AND 18.0 MEV,					1016	1451	39
BASED ON ABACUS-2 PROBLEMS.					1016	1451	40
NUCLEAR TEMPERATURES WERE ESTIMATED FOR CONTINUUM INELASTIC					1016	1451	41
SCATTERING AND (N,2N) REACTIONS.					1016	1451	42
PARAMETERS FOR THE FREE GAS THERMAL SCATTERING LAW WERE INCLUDED,					1016	1451	43
NO RESONANCE PARAMETERS ARE INCLUDED, EITHER HERE OR IN THE					1016	1451	44
PRIMARY SOURCES, SINCE THE RESONANCES ARE SUCH THAT SELF-SHIELDING					1016	1451	45
IS UNIMPORTANT.					1016	1451	46
0.0	0.0	0	0	0	01016	1	0
0.0	0.0	0	0	0	01016	0	0
22000.0	4.7468E+01	0	0	0	01016	3	1
0.0	0.0	0	0	1	4251016	3	1
425	5				1016	3	1
1.0000E-03	3.4813E+01	2.0000E-03	2.5826E+01	4.0000E-03	1.9471E+01	1016	3
6.0000E-03	1.6656E+01	8.0000E-03	1.4978E+01	1.0000E-02	1.3833E+01	1016	3
2.0000E-02	1.0991E+01	4.0000E-02	8.9810E+00	5.0000E-02	8.0910E+00	1016	3
8.0000E-02	7.5600E+00	1.0000E-01	7.1980E+00	2.0000E-01	6.3000E+00	1016	3
4.0000E-01	5.6640E+00	6.0000E-01	5.3830E+00	9.0000E-01	5.2150E+00	1016	3
1.0000E+00	5.1003E+00	1.5000E+00	4.9222E+00	2.0000E+00	4.6361E+00	1016	3
4.0000E+00	4.6351E+00	6.0000E+00	4.5161E+00	8.0000E+00	4.4330E+00	1016	3
1.0000E+01	4.3668E+00	4.0000E+01	4.2834E+00	1.0000E+02	4.2770E+00	1016	3
2.0000E+02	4.2700E+00	4.0300E+02	4.2900E+00	6.0100E+02	4.3000E+00	1016	3
8.1200E+02	4.3200E+00	1.0420E+03	4.3300E+00	1.0960E+03	4.3400E+00	1016	3
1.1500E+03	4.3500E+00	1.2100E+03	4.3800E+00	1.2700E+03	4.4000E+00	1016	3

1,3400E+03	4.4100E+00	1.4100E+03	4.4800E+00	1,4800E+03	4,5200E+00	1016	3	1	63
1,5500E+03	4.6000E+00	1.6300E+03	4.6900E+00	1,7200E+03	4,7800E+00	1016	3	1	64
1,8100E+03	4.9300E+00	1.9000E+03	5.1000E+00	2,0000E+03	5,3000E+00	1016	3	1	65
2,1000E+03	5.5500E+00	2.5000E+03	6.2000E+00	2,7000E+03	7,2000E+00	1016	3	1	66
2,8300E+03	8.3000E+00	2.9500E+03	1,1000E+01	3,0100E+03	2,1500E+01	1016	3	1	67
3,0700E+03	4.2000E+01	3.1300E+03	2,3500E+01	3,2000E+03	1,3500E+01	1016	3	1	68
3,3000E+03	1,0400E+01	3.4000E+03	9,4000E+00	3,5500E+03	1,0400E+01	1016	3	1	69
3,7000E+03	1.6500E+01	3.8300E+03	2,6500E+01	3,9900E+03	1,4000E+01	1016	3	1	70
4,1200E+03	1.0500E+01	4.1800E+03	1,4900E+01	4,2600E+03	9,6000E+00	1016	3	1	71
4,5500E+03	8.3000E+00	4.9600E+03	8,1000E+00	6,5100E+03	1,1000E+01	1016	3	1	72
7,9100E+03	1.4500E+01	8.0500E+03	1,8000E+01	9,1100E+03	2,4000E+01	1016	3	1	73
8,1700E+03	1.9500E+01	8.2400E+03	2,2500E+01	8,3200E+03	4,0000E+01	1016	3	1	74
8,4000E+03	3,2000E+01	8.5600E+03	2,3000E+01	9,6700E+03	2,0500E+01	1016	3	1	75
9,2500E+03	2,0500E+01	1,0250E+04	2,5500E+01	1,0430E+04	2,9000E+01	1016	3	1	76
1,0510E+04	5,2000E+01	1,0580E+04	3,1000E+01	1,0800E+04	2,8500E+01	1016	3	1	77
1,0950E+04	3,3000E+01	1,1040E+04	5,7000E+01	1,1160E+04	3,5000E+01	1016	3	1	78
1,1270E+04	3,2500E+01	1,1400E+04	3,3000E+01	1,1450E+04	8,9000E+01	1016	3	1	79
1,1500E+04	3,3500E+01	1,1770E+04	3,5500E+01	1,2000E+04	4,0000E+01	1016	3	1	80
1,2060E+04	4,5000E+01	1,2120E+04	5,6000E+01	1,2320E+04	4,1000E+01	1016	3	1	81
1,2740E+04	4,9000E+01	1,2810E+04	6,1000E+01	1,2900E+04	4,9000E+01	1016	3	1	82
1,3050E+04	6,4000E+01	1,3100E+04	5,0000E+01	1,3300E+04	5,5000E+01	1016	3	1	83
1,3390E+04	8,2000E+01	1,3470E+04	5,9000E+01	1,3650E+04	5,8500E+01	1016	3	1	84
1,5000E+04	8,2000E+01	1,5620E+04	9,0000E+01	1,6190E+04	1,0000E+02	1016	3	1	85
1,6360E+04	1,1600E+02	1,6540E+04	1,0600E+02	1,7270E+04	1,1200E+02	1016	3	1	86
1,8240E+04	1,1100E+02	1,9020E+04	1,0400E+02	1,9750E+04	9,4000E+01	1016	3	1	87
2,0290E+04	8,0000E+01	2,0750E+04	6,9000E+01	2,1040E+04	5,8000E+01	1016	3	1	88
2,1200E+04	5,0000E+01	2,1380E+04	4,0000E+01	2,1590E+04	2,6500E+01	1016	3	1	89
2,1700E+04	1,5000E+01	2,1750E+04	5,7000E+00	2,1810E+04	4,2000E+00	1016	3	1	90
2,1870E+04	7,5000E+00	2,1950E+04	2,1600E+01	2,1990E+04	5,4000E+01	1016	3	1	91
2,2010E+04	8,0000E+01	2,2070E+04	8,6000E+01	2,2180E+04	9,0000E+01	1016	3	1	92
2,3820E+04	5,4000E+01	2,3900E+04	6,4000E+01	2,4000E+04	5,0000E+01	1016	3	1	93
2,5350E+04	3,4000E+01	2,6450E+04	2,8000E+01	2,7160E+04	3,0000E+01	1016	3	1	94
2,7420E+04	2,9500E+01	2,7810E+04	2,6500E+01	2,8320E+04	2,0000E+01	1016	3	1	95
2,8970E+04	1,7200E+01	2,9950E+04	1,4500E+01	3,0900E+04	1,1600E+01	1016	3	1	96
3,1800E+04	1,0700E+01	3,2250E+04	1,1000E+01	3,3000E+04	8,6000E+00	1016	3	1	97
3,3500E+04	6,0000E+00	3,4000E+04	4,0000E+00	3,4500E+04	2,4000E+00	1016	3	1	98
3,5100E+04	1,0900E+00	3,5400E+04	7,5000E+01	3,5600E+04	1,0400E+00	1016	3	1	99
3,6150E+04	8,8000E+00	3,6550E+04	2,8500E+01	3,6900E+04	5,1500E+01	1016	3	1	100
3,7020E+04	5,7500E+01	3,8400E+04	2,5000E+01	3,8800E+04	2,3000E+01	1016	3	1	101
3,9000E+04	2,4000E+01	3,9600E+04	1,7000E+01	4,0300E+04	1,6500E+01	1016	3	1	102
4,1450E+04	1,0200E+01	4,1900E+04	9,5000E+00	4,2100E+04	1,0400E+01	1016	3	1	103
4,3100E+04	7,7000E+00	4,4100E+04	8,2000E+00	4,5100E+04	4,7000E+00	1016	3	1	104
4,5700E+04	3,7000E+00	4,6250E+04	5,4000E+00	4,7900E+04	2,5000E+00	1016	3	1	105
4,8750E+04	4,9000E+00	4,9350E+04	4,3000E+00	4,9650E+04	2,8000E+00	1016	3	1	106
5,0000E+04	2,9000E+00	5,0600E+04	5,7000E+00	5,1200E+04	1,6500E+01	1016	3	1	107
5,1650E+04	2,9000E+01	5,2100E+04	4,1000E+01	5,4300E+04	2,1500E+01	1016	3	1	108
5,6100E+04	1,4500E+01	5,6500E+04	1,7500E+01	5,6850E+04	1,4200E+01	1016	3	1	109
5,8900E+04	1,0200E+01	6,0700E+04	9,2000E+00	6,1150E+04	8,1000E+00	1016	3	1	110
6,1750E+04	9,0000E+00	6,2600E+04	8,8000E+00	6,3500E+04	1,0400E+01	1016	3	1	111
6,6900E+04	6,8000E+00	6,8150E+04	6,8000E+00	6,9900E+04	5,4000E+00	1016	3	1	112
7,1300E+04	5,3000E+00	7,1750E+04	6,6000E+00	7,2300E+04	5,3000E+00	1016	3	1	113
7,4000E+04	5,0000E+00	7,4500E+04	1,0000E+01	7,5100E+04	5,3000E+00	1016	3	1	114
7,5900E+04	4,6000E+00	7,7700E+04	5,1500E+00	7,8200E+04	3,5500E+00	1016	3	1	115
7,9800E+04	3,8000E+00	8,0400E+04	3,6000E+00	8,1100E+04	2,9000E+00	1016	3	1	116
8,1700E+04	3,2000E+00	8,2300E+04	2,3000E+00	8,2600E+04	1,3500E+00	1016	3	1	117
8,2900E+04	1,4800E+00	8,3200E+04	6,7000E+00	8,3600E+04	8,3000E+00	1016	3	1	118
8,4600E+04	4,6000E+00	8,5300E+04	5,4000E+00	8,5600E+04	4,0500E+00	1016	3	1	119
8,6300E+04	4,1500E+00	8,8000E+04	3,4000E+00	8,8700E+04	3,9000E+00	1016	3	1	120
8,9900E+04	3,5500E+00	9,0900E+04	4,1000E+00	9,2100E+04	3,2000E+00	1016	3	1	121
9,2800E+04	3,4000E+00	9,3700E+04	2,8500E+00	9,4400E+04	3,1000E+00	1016	3	1	122
9,5200E+04	2,7000E+00	9,5700E+04	2,9000E+00	9,6400E+04	2,5500E+00	1016	3	1	123
9,7300E+04	3,6000E+00	9,8400E+04	2,7000E+00	9,9300E+04	4,0000E+00	1016	3	1	124

1.0030E+05	3.2500E+00	1.0220E+05	2.8000E+00	1.0290E+05	2.3500E+00	1016	3	1	125
1.0550E+05	2.4000E+00	1.0620E+05	2.6000E+00	1.0750E+05	2.1000E+00	1016	3	1	126
1.0870E+05	1.9500E+00	1.0920E+05	2.6000E+00	1.1020E+05	2.3500E+00	1016	3	1	127
1.1070E+05	1.9500E+00	1.1170E+05	1.9400E+00	1.1220E+05	1.6300E+00	1016	3	1	128
1.1310E+05	2.5500E+00	1.1530E+05	1.5900E+00	1.1690E+05	1.7800E+00	1016	3	1	129
1.1740E+05	1.0700E+00	1.1790E+05	7.4000E-01	1.1860E+05	3.0000E+00	1016	3	1	130
1.1900E+05	5.0000E+00	1.2070E+05	2.3000E+00	1.2140E+05	3.0000E+00	1016	3	1	131
1.2270E+05	2.2300E+00	1.2320E+05	2.3500E+00	1.2420E+05	2.0600E+00	1016	3	1	132
1.2550E+05	1.5500E+00	1.2680E+05	2.1000E+00	1.2740E+05	1.8500E+00	1016	3	1	133
1.2840E+05	2.4000E+00	1.3060E+05	1.5500E+00	1.3180E+05	1.4600E+00	1016	3	1	134
1.3260E+05	2.1500E+00	1.3320E+05	4.0000E+00	1.3390E+05	2.3000E+00	1016	3	1	135
1.3450E+05	1.8200E+00	1.3520E+05	1.8600E+00	1.3590E+05	1.2400E+00	1016	3	1	136
1.3870E+05	1.2000E+00	1.4160E+05	1.9400E+00	1.4230E+05	1.9500E+00	1016	3	1	137
1.4310E+05	1.7600E+00	1.4460E+05	1.1200E+00	1.4530E+05	1.2500E+00	1016	3	1	138
1.4690E+05	1.5000E+00	1.4780E+05	1.5200E+00	1.4900E+05	2.3000E+00	1016	3	1	139
1.5170E+05	1.0800E+00	1.5290E+05	6.2000E-01	1.5330E+05	8.2000E+00	1016	3	1	140
1.5490E+05	4.3500E+00	1.5670E+05	1.9100E+00	1.5830E+05	1.5000E+00	1016	3	1	141
1.5920E+05	1.4800E+00	1.6020E+05	1.0700E+00	1.6110E+05	1.0400E+00	1016	3	1	142
1.6270E+05	1.2400E+00	1.6420E+05	1.2000E+00	1.6550E+05	1.0000E+00	1016	3	1	143
1.6640E+05	7.4000E-01	1.6720E+05	1.1500E+00	1.6830E+05	9.6000E+00	1016	3	1	144
1.6930E+05	9.3000E-01	1.7130E+05	1.3000E+00	1.7300E+05	7.5000E+00	1016	3	1	145
1.7520E+05	1.3000E+00	1.7670E+05	1.1600E+00	1.7830E+05	1.2700E+00	1016	3	1	146
1.7930E+05	1.9000E+00	1.8030E+05	2.1500E+00	1.8130E+05	1.8500E+00	1016	3	1	147
1.8350E+05	1.0000E+00	1.8460E+05	1.6500E+00	1.8560E+05	3.5000E+00	1016	3	1	148
1.8790E+05	1.6500E+00	1.8910E+05	2.2000E+00	1.9020E+05	3.9000E+00	1016	3	1	149
1.9180E+05	7.3000E+00	1.9360E+05	5.0000E+00	1.9720E+05	2.4000E+00	1016	3	1	150
1.9830E+05	2.3000E+00	2.0100E+05	1.6400E+00	2.0460E+05	1.4800E+00	1016	3	1	151
2.0970E+05	1.3000E+00	2.1110E+05	1.3500E+00	2.1650E+05	5.8000E+00	1016	3	1	152
2.2100E+05	2.1900E+00	2.3300E+05	2.2000E+00	2.4400E+05	2.3300E+00	1016	3	1	153
2.5700E+05	7.9500E+00	2.7000E+05	5.0000E+00	2.8400E+05	2.8200E+00	1016	3	1	154
2.9900E+05	2.5700E+00	3.1400E+05	2.4900E+00	3.3000E+05	2.4200E+00	1016	3	1	155
3.4700E+05	2.3800E+00	3.6500E+05	2.3600E+00	3.8300E+05	2.3400E+00	1016	3	1	156
4.0300E+05	2.3300E+00	4.2400E+05	2.3400E+00	4.4500E+05	2.3500E+00	1016	3	1	157
4.6800E+05	2.3700E+00	4.9200E+05	2.4000E+00	5.1800E+05	2.4600E+00	1016	3	1	158
5.4400E+05	2.5200E+00	5.7200E+05	2.6100E+00	6.0100E+05	2.7200E+00	1016	3	1	159
6.3200E+05	2.8700E+00	6.6600E+05	3.0200E+00	6.9900E+05	3.2300E+00	1016	3	1	160
7.3400E+05	3.4800E+00	7.7200E+05	3.3200E+00	8.1200E+05	3.0900E+00	1016	3	1	161
8.5300E+05	2.8600E+00	8.9700E+05	2.8100E+00	9.4300E+05	3.0900E+00	1016	3	1	162
9.9100E+05	3.1600E+00	1.0420E+06	3.0400E+00	1.0960E+06	2.8700E+00	1016	3	1	163
1.1500E+06	2.8000E+00	1.2100E+06	2.8800E+00	1.2700E+06	3.0000E+00	1016	3	1	164
1.3400E+06	3.1500E+00	1.4100E+06	3.2300E+00	1.4800E+06	3.3500E+00	1016	3	1	165
1.5500E+06	3.4500E+00	1.6300E+06	3.5600E+00	1.7200E+06	3.6500E+00	1016	3	1	166
1.8100E+06	3.7400E+00	1.9000E+06	3.8100E+00	2.0000E+06	3.9000E+00	1016	3	1	167
2.1000E+06	3.9500E+00	2.2100E+06	4.0100E+00	2.3200E+06	4.0300E+00	1016	3	1	168
2.4400E+06	4.0700E+00	2.5200E+06	3.4200E+00	2.5600E+06	3.4400E+00	1016	3	1	169
2.6100E+06	4.0200E+00	2.6350E+06	3.8100E+00	2.6650E+06	4.0400E+00	1016	3	1	170
2.6900E+06	3.8600E+00	2.7400E+06	3.5800E+00	2.7950E+06	3.3950E+00	1016	3	1	171
2.8300E+06	3.5200E+00	2.8780E+06	3.6150E+00	2.9700E+06	3.6300E+00	1016	3	1	172
3.0100E+06	3.9100E+00	3.0900E+06	3.4700E+00	3.1300E+06	3.4700E+00	1016	3	1	173
3.1800E+06	3.5800E+00	3.2100E+06	3.8600E+00	3.2400E+06	3.6600E+00	1016	3	1	174
3.2900E+06	3.6600E+00	3.3200E+06	3.8000E+00	3.3700E+06	3.6200E+00	1016	3	1	175
3.4600E+06	3.7800E+00	3.5500E+06	3.8600E+00	3.6400E+06	3.8600E+00	1016	3	1	176
3.7800E+06	3.8200E+00	3.8200E+06	3.7700E+00	3.8800E+06	3.5600E+00	1016	3	1	177
3.9300E+06	3.5550E+00	4.0200E+06	3.7700E+00	4.0400E+06	3.6400E+00	1016	3	1	178
4.1200E+06	3.6200E+00	4.2300E+06	3.7700E+00	4.3150E+06	3.7200E+00	1016	3	1	179
4.3750E+06	3.5500E+00	4.4050E+06	3.5500E+00	4.4400E+06	3.6800E+00	1016	3	1	180
4.5000E+06	3.6600E+00	4.6000E+06	3.5400E+00	4.6700E+06	3.6700E+00	1016	3	1	181
4.7300E+06	3.7500E+00	4.8000E+06	3.6000E+00	4.9100E+06	3.5100E+00	1016	3	1	182
5.0600E+06	3.6400E+00	5.1200E+06	3.4800E+00	5.1600E+06	3.4900E+00	1016	3	1	183
5.2000E+06	3.4400E+00	5.2600E+06	3.3200E+00	5.3000E+06	3.5400E+00	1016	3	1	184
5.3600E+06	3.3400E+00	5.4300E+06	3.4550E+00	5.7000E+06	3.4400E+00	1016	3	1	185
6.0000E+06	3.3400E+00	6.3000E+06	3.3100E+00	6.6300E+06	3.2800E+00	1016	3	1	186

6.9700E+06	3.2400E+00	7.3300E+06	3.1900E+00	7.7000E+06	3.1300E+00	1016	3	1	187
8.1000E+06	3.0600E+00	8.5100E+06	3.0100E+00	8.9500E+06	2.9400E+00	1016	3	1	188
9.4100E+06	2.8600E+00	9.8900E+06	2.7750E+00	1.0400E+07	2.6800E+00	1016	3	1	189
1.0900E+07	2.5950E+00	1.1500E+07	2.4950E+00	1.2100E+07	2.4100E+00	1016	3	1	190
1.2700E+07	2.3400E+00	1.3300E+07	2.2900E+00	1.4000E+07	2.2650E+00	1016	3	1	191
1.4750E+07	2.2500E+00	1.5500E+07	2.2300E+00	1.6300E+07	2.1900E+00	1016	3	1	192
1.7100E+07	2.1800E+00	1.8000E+07	2.1700E+00			1016	3	1	193
0.0	0.0	0	0	0		1016	3	0	194
22000.0	4.7468E+01	0	0	0		1016	3	2	195
0.0	0.0	0	0	1		4101016	3	2	196
410	5					1016	3	2	197
1.0000E+03	4.1300E+00	1.5000E+00	4.1300E+00	2.0000E+00	4.1500E+00	1016	3	2	198
4.0000E+00	4.1500E+00	6.0000E+00	4.1200E+00	8.0000E+00	4.0900E+00	1016	3	2	199
1.0000E+01	4.0600E+00	4.0000E+01	4.1300E+00	1.0000E+02	4.1800E+00	1016	3	2	200
2.0000E+02	4.2012E+00	4.0300E+02	4.2414E+00	5.0100E+02	4.2601E+00	1016	3	2	201
8.1200E+02	4.2855E+00	1.0420E+03	4.2994E+00	1.0960E+03	4.3102E+00	1016	3	2	202
1.1500E+03	4.3208E+00	1.2100E+03	4.3515E+00	1.2700E+03	4.3722E+00	1016	3	2	203
1.3400E+03	4.3828E+00	1.4100E+03	4.4535E+00	1.4800E+03	4.4940E+00	1016	3	2	204
1.5500E+03	4.5746E+00	1.6300E+03	4.6651E+00	1.7200E+03	4.7557E+00	1016	3	2	205
1.8100E+03	4.9062E+00	1.9000E+03	5.0766E+00	2.0000E+03	5.2770E+00	1016	3	2	206
2.1000E+03	5.5274E+00	2.5000E+03	6.1775E+00	2.7000E+03	7.1751E+00	1016	3	2	207
2.8300E+03	8.2688E+00	2.9500E+03	1.0941E+01	3.0100E+03	2.1383E+01	1016	3	2	208
3.0700E+03	4.1790E+01	3.1300E+03	2.3387E+01	3.2000E+03	1.3448E+01	1016	3	2	209
3.3000E+03	1.0369E+01	3.4000E+03	9.3740E+00	3.5500E+03	1.0374E+01	1016	3	2	210
3.7000E+03	1.6458E+01	3.8300E+03	2.6390E+01	3.9900E+03	1.3967E+01	1016	3	2	211
4.1200E+03	1.0478E+01	4.1800E+03	1.4880E+01	4.2600E+03	9.5814E+00	1016	3	2	212
4.5500E+03	8.2836E+00	4.9600E+03	8.0848E+00	5.5100E+03	1.0987E+01	1016	3	2	213
7.9100E+03	1.4480E+01	8.0500E+03	1.7958E+01	8.1100E+03	2.3944E+01	1016	3	2	214
8.1700E+03	1.9453E+01	8.2400E+03	2.2452E+01	8.3200E+03	3.9898E+01	1016	3	2	215
8.4000E+03	3.1961E+01	8.5600E+03	2.2983E+01	8.6700E+03	2.0485E+01	1016	3	2	216
9.2500E+03	2.0487E+01	1.0250E+04	2.5486E+01	1.0430E+04	2.8974E+01	1016	3	2	217
1.0510E+04	5.1877E+01	1.0580E+04	3.0970E+01	1.0800E+04	2.8486E+01	1016	3	2	218
1.0950E+04	3.2987E+01	1.1040E+04	5.6987E+01	1.1160E+04	3.4987E+01	1016	3	2	219
1.1270E+04	3.2487E+01	1.1400E+04	3.2987E+01	1.1450E+04	8.8987E+00	1016	3	2	220
1.1500E+04	3.3487E+01	1.1770E+04	3.5486E+01	1.2000E+04	3.9979E+01	1016	3	2	221
1.2060E+04	4.4964E+01	1.2120E+04	5.5914E+01	1.2320E+04	4.0983E+01	1016	3	2	222
1.2740E+04	4.8972E+01	1.2810E+04	6.0922E+01	1.2900E+04	4.8972E+01	1016	3	2	223
1.3050E+04	6.3984E+01	1.3100E+04	4.9984E+01	1.3300E+04	5.4985E+01	1016	3	2	224
1.3390E+04	8.1985E+01	1.3470E+04	5.8985E+01	1.3650E+04	5.8485E+01	1016	3	2	225
1.5000E+04	8.1983E+01	1.5620E+04	8.9982E+01	1.6190E+04	9.9978E+00	1016	3	2	226
1.6360E+04	1.1596E+02	1.6540E+04	1.0597E+02	1.7270E+04	1.1198E+02	1016	3	2	227
1.8240E+04	1.1098E+02	1.9020E+04	1.0398E+02	1.9750E+04	9.3985E+01	1016	3	2	228
2.0290E+04	7.9985E+01	2.0750E+04	6.8972E+01	2.1040E+04	5.7982E+01	1016	3	2	229
2.1200E+04	4.9981E+01	2.1380E+04	3.9978E+01	2.1590E+04	2.6470E+01	1016	3	2	230
2.1700E+04	1.4962E+01	2.1750E+04	5.6574E+00	2.1810E+04	4.1497E+00	1016	3	2	231
2.1870E+04	7.4395E+00	2.1950E+04	2.1521E+01	2.1990E+04	5.3909E+00	1016	3	2	232
2.2010E+04	7.9902E+01	2.2070E+04	8.5881E+01	2.2180E+04	8.9856E+00	1016	3	2	233
2.3820E+04	5.3955E+01	2.3900E+04	6.3956E+01	2.4000E+04	4.9957E+01	1016	3	2	234
2.5350E+04	3.968E+01	2.6450E+04	2.7972E+01	2.7160E+04	2.9974E+01	1016	3	2	235
2.7420E+04	2.9475E+01	2.7810E+04	2.6475E+01	2.8320E+04	1.9977E+01	1016	3	2	236
2.8970E+04	1.7178E+01	2.9950E+04	1.4480E+01	3.0900E+04	1.1581E+01	1016	3	2	237
3.1800E+04	1.0682E+01	3.2250E+04	1.0983E+01	3.3000E+04	8.5839E+00	1016	3	2	238
3.3500E+04	5.9843E+00	3.4000E+04	3.9849E+00	3.4500E+04	2.3853E+00	1016	3	2	239
3.5100E+04	1.0760E+00	3.5400E+04	7.3620E+01	3.5600E+04	1.0263E+00	1016	3	2	240
3.6150E+04	8.7867E+00	3.6550E+04	2.8487E+01	3.6900E+04	5.1487E+00	1016	3	2	241
3.7020E+04	5.7488E+01	3.8400E+04	2.4988E+01	3.8800E+04	2.2988E+01	1016	3	2	242
3.9000E+04	2.3989E+01	3.9600E+04	1.6989E+01	4.0300E+04	1.6489E+01	1016	3	2	243
4.1450E+04	1.0190E+01	4.1900E+04	9.4898E+00	4.2100E+04	1.0390E+01	1016	3	2	244
4.3100E+04	7.6902E+00	4.4100E+04	8.1906E+00	4.5100E+04	4.6908E+00	1016	3	2	245
4.5700E+04	3.6910E+00	4.6250E+04	5.3912E+00	4.7900E+04	2.4916E+00	1016	3	2	246
4.8750E+04	4.8918E+00	4.9350E+04	4.2919E+00	4.9650E+04	2.7920E+00	1016	3	2	247
5.0000E+04	2.8921E+00	5.0600E+04	5.6922E+00	5.1200E+04	1.6492E+00	1016	3	2	248

5,1650E+04	2.8992E+01	5.2100E+04	4,0993E+01	5,4300E+04	2,1493E+011016	3	2	249
5,6100E+04	1.4493E+01	5.6500E+04	1,7493E+01	5,6850E+04	1,4193E+011016	3	2	250
5,8900E+04	1.0194E+01	6.0700E+04	9,1937E+00	6,1150E+04	8,0937E+001016	3	2	251
6,1750E+04	8,9938E+00	6.2600E+04	8,7938E+00	6,3500E+04	1,0394E+011016	3	2	252
6,6900E+04	6,7941E+00	6.8150E+04	6,7942E+00	6,9900E+04	5,3943E+001016	3	2	253
7,1300E+04	5,2944E+00	7.1750E+04	6,5944E+00	7,2300E+04	5,2944E+001016	3	2	254
7,4000E+04	4,9945E+00	7.4500E+04	9,9945E+00	7,5100E+04	5,2945E+001016	3	2	255
7,5900E+04	4,5946E+00	7.7700E+04	5,1446E+00	7,8200E+04	3,5446E+001016	3	2	256
7,9800E+04	3,7947E+00	8.0400E+04	3,5947E+00	8,1100E+04	2,8947E+001016	3	2	257
8,1700E+04	3,1947E+00	8.2300E+04	2,2947E+00	8,2600E+04	1,3447E+001016	3	2	258
8,2900E+04	1,4747E+00	8.3200E+04	6,6947E+00	8,3600E+04	8,2947E+001016	3	2	259
8,4600E+04	4,5948E+00	8.5300E+04	5,3948E+00	8,5600E+04	4,0448E+001016	3	2	260
8,6300E+04	4,1448E+00	8.8000E+04	3,3948E+00	8,8700E+04	3,8948E+001016	3	2	261
8,9900E+04	3,5448E+00	9.0900E+04	4,0948E+00	9,2100E+04	3,1948E+001016	3	2	262
9,2800E+04	3,3948E+00	9.3700E+04	2,8448E+00	9,4400E+04	3,0948E+001016	3	2	263
9,5200E+04	2,6948E+00	9.5700E+04	2,8948E+00	9,6400E+04	2,5448E+001016	3	2	264
9,7300E+04	3,5948E+00	9.8400E+04	2,6948E+00	9,9300E+04	3,9948E+001016	3	2	265
1,0030E+05	3,2448E+00	1.0220E+05	2,7948E+00	1,0290E+05	2,3448E+001016	3	2	266
1,0550E+05	2,3948E+00	1.0620E+05	2,5948E+00	1,0750E+05	2,0949E+001016	3	2	267
1,0870E+05	1,9449E+00	1.0920E+05	2,5949E+00	1,1020E+05	2,3449E+001016	3	2	268
1,1070E+05	1,9449E+00	1.1170E+05	1,9349E+00	1,1220E+05	1,6249E+001016	3	2	269
1,1310E+05	2,5449E+00	1.1530E+05	1,5849E+00	1,1690E+05	1,7749E+001016	3	2	270
1,1740E+05	1,0649E+00	1.1790E+05	7,3490E-01	1,1860E+05	2,9949E+001016	3	2	271
1,1900E+05	4,9949E+00	1.2070E+05	2,2949E+00	1,2140E+05	2,9949E+001016	3	2	272
1,2270E+05	2,2249E+00	1.2320E+05	2,3449E+00	1,2420E+05	2,0549E+001016	3	2	273
1,2550E+05	1,5449E+00	1.2680E+05	2,0949E+00	1,2740E+05	1,8449E+001016	3	2	274
1,2840E+05	2,3949E+00	1.3060E+05	1,5449E+00	1,3180E+05	1,4549E+001016	3	2	275
1,3260E+05	2,1449E+00	1.3320E+05	3,9949E+00	1,3390E+05	2,2949E+001016	3	2	276
1,3450E+05	1,8149E+00	1.3520E+05	1,8550E+00	1,3590E+05	1,2350E+001016	3	2	277
1,3870E+05	1,1950E+00	1.4160E+05	1,9350E+00	1,4230E+05	1,9450E+001016	3	2	278
1,4310E+05	1,7550E+00	1.4460E+05	1,1150E+00	1,4530E+05	1,2450E+001016	3	2	279
1,4690E+05	1,4950E+00	1.4780E+05	1,5150E+00	1,4900E+05	2,2950E+001016	3	2	280
1,5170E+05	1,0750E+00	1.5290E+05	6,1500E-01	1,5330E+05	8,1500E-011016	3	2	281
1,5490E+05	4,3450E+00	1.5670E+05	1,9050E+00	1,5830E+05	1,4950E+001016	3	2	282
1,5920E+05	1,4750E+00	1.6020E+05	1,0650E+00	1,6110E+05	1,0350E+001016	3	2	283
1,6270E+05	1,2350E+00	1.6420E+05	1,1950E+00	1,6550E+05	9,9500E-011016	3	2	284
1,6640E+05	7,3500E-01	1.6720E+05	1,1450E+00	1,6830E+05	9,5500E-011016	3	2	285
1,6930E+05	9,2500E-01	1.7130E+05	1,2951E+00	1,7300E+05	7,4510E-011016	3	2	286
1,7520E+05	1,2951E+00	1.7670E+05	1,1551E+00	1,7830E+05	1,2651E+001016	3	2	287
1,7930E+05	1,8951E+00	1.8030E+05	2,1451E+00	1,8130E+05	1,8451E+001016	3	2	288
1,8350E+05	9,9510E-01	1.8460E+05	1,6451E+00	1,8560E+05	3,4951E+001016	3	2	289
1,8790E+05	1,6451E+00	1.8910E+05	2,1951E+00	1,9020E+05	3,8951E+001016	3	2	290
1,9180E+05	7,2951E+00	1.9360E+05	4,9951E+00	1,9720E+05	2,3951E+001016	3	2	291
1,9830E+05	2,2951E+00	2.0100E+05	1,6351E+00	2,0460E+05	1,4752E+001016	3	2	292
2,0970E+05	1,2952E+00	2.1110E+05	1,3452E+00	2,1650E+05	5,7520E-011016	3	2	293
2,2100E+05	2,1852E+00	2.3300E+05	2,1952E+00	2,4400E+05	2,3253E+001016	3	2	294
2,5700E+05	7,9453E+00	2.7000E+05	4,9954E+00	2,8400E+05	2,8154E+001016	3	2	295
2,9900E+05	2,5654E+00	3.1400E+05	2,4855E+00	3,3000E+05	2,4155E+001016	3	2	296
3,4700E+05	2,3257E+00	3.6500E+05	2,3556E+00	3,8300E+05	2,3357E+001016	3	2	297
4,0300E+05	2,3257E+00	4.2400E+05	2,3358E+00	4,4500E+05	2,3458E+001016	3	2	298
4,6800E+05	2,3659E+00	4.9200E+05	2,3959E+00	5,1800E+05	2,4560E+001016	3	2	299
5,4400E+05	2,5160E+00	5.7200E+05	2,6061E+00	6,0100E+05	2,7162E+001016	3	2	300
6,3200E+05	2,8662E+00	6.6600E+05	3,0163E+00	6,9900E+05	3,2264E+001016	3	2	301
7,3400E+05	3,4764E+00	7.7200E+05	3,3165E+00	8,1200E+05	3,0865E+001016	3	2	302
8,5300E+05	2,8566E+00	8.9700E+05	2,8066E+00	9,4300E+05	3,0868E+001016	3	2	303
9,9100E+05	3,1571E+00	1.0420E+06	2,9966E+00	1,0960E+06	2,7740E+001016	3	2	304
1,1500E+06	2,4386E+00	1.2100E+06	2,6489E+00	1,2700E+06	2,7251E+001016	3	2	305
1,3400E+06	2,8242E+00	1.4100E+06	2,8693E+00	1,4800E+06	2,9635E+001016	3	2	306
1,5500E+06	3,0264E+00	1.6300E+06	3,0944E+00	1,7200E+06	3,1484E+001016	3	2	307
1,8100E+06	3,1945E+00	1.9000E+06	3,2195E+00	2,0000E+06	3,2695E+001016	3	2	308
2,1000E+06	3,2795E+00	2.2100E+06	3,2895E+00	2,3200E+06	3,2944E+001016	3	2	309
2,4400E+06	3,3193E+00	2.5200E+06	2,6202E+00	2,5600E+06	2,6151E+001016	3	2	310

2.6100E+06	3.1630E+00	2.6350E+06	2.9359E+00	2.6650E+06	3.1469E+00	101016	3	2	311
2.6900E+06	2.9698E+00	2.7400E+06	2.6538E+00	2.7950E+06	2.4497E+00	101016	3	2	312
2.8300E+06	2.5637E+00	2.8780E+06	2.6466E+00	2.9700E+06	2.6386E+00	101016	3	2	313
3.0100E+06	2.9105E+00	3.0900E+06	2.4554E+00	3.1300E+06	2.4483E+00	101016	3	2	314
3.1800E+06	2.5492E+00	3.2100E+06	2.8232E+00	3.2400E+06	2.6171E+00	101016	3	2	315
3.2900E+06	2.6080E+00	3.3200E+06	2.7409E+00	3.3700E+06	2.5488E+00	101016	3	2	316
3.4600E+06	2.6876E+00	3.5500E+06	2.7474E+00	3.6400E+06	2.7271E+00	101016	3	2	317
3.7800E+06	2.6558E+00	3.8200E+06	2.5967E+00	3.8800E+06	2.3805E+00	101016	3	2	318
3.9300E+06	2.7703E+00	4.0200E+06	2.5760E+00	4.0400E+06	2.4429E+00	101016	3	2	319
4.1200E+06	2.4116E+00	4.2300E+06	2.5451E+00	4.3150E+06	2.4906E+00	101016	3	2	320
4.3750E+06	2.3173E+00	4.4050E+06	2.3161E+00	4.4400E+06	2.4439E+00	101016	3	2	321
4.5000E+06	2.4185E+00	4.6000E+06	2.2889E+00	4.6700E+06	2.4124E+00	101016	3	2	322
4.7300E+06	2.4890E+00	4.8000E+06	2.3364E+00	4.9100E+06	2.2405E+00	101016	3	2	323
5.0600E+06	2.3631E+00	5.1200E+06	2.2005E+00	5.1600E+06	2.2081E+00	101016	3	2	324
5.2000E+06	2.3557E+00	5.2600E+06	2.0331E+00	5.3000E+06	2.2518E+00	101016	3	2	325
5.3600E+06	2.0491E+00	5.4300E+06	2.1604E+00	5.7000E+06	2.1319E+00	101016	3	2	326
6.0000E+06	2.0269E+00	6.3000E+06	2.0026E+00	6.6300E+06	1.9671E+00	101016	3	2	327
6.9700E+06	1.9320E+00	7.3300E+06	1.8852E+00	7.7000E+06	1.8189E+00	101016	3	2	328
8.1000E+06	1.7519E+00	8.5100E+06	1.7043E+00	8.9500E+06	1.6350E+00	101016	3	2	329
9.4100E+06	1.5575E+00	9.8900E+06	1.4761E+00	1.0400E+07	1.3797E+00	101016	3	2	330
1.0900E+07	1.2976E+00	1.1500E+07	1.2072E+00	1.2100E+07	1.1339E+00	101016	3	2	331
1.2700E+07	1.0767E+00	1.3300E+07	1.0454E+00	1.4000E+07	1.0294E+00	101016	3	2	332
1.4750E+07	1.0264E+00	1.5500E+07	1.0316E+00	1.6300E+07	1.0099E+00	101016	3	2	333
1.7100E+07	1.0293E+00	1.8000E+07	1.0450E+00			1016	3	2	334
0.0	0.0	0	0			01016	3	0	335
22000.0	4.7468E+01	0	99	0		01016	3	4	336
0.0	0.0	0	0	2		591016	3	4	337
2	2	59	5			1016	3	4	338
9.9100E+05	0.0000E+00	1.0420E+06	4.1000E+02	1.0960E+06	9.4000E+02	101016	3	4	339
1.1500E+06	1.6000E+01	1.2100E+06	2.3000E+01	1.2700E+06	2.7400E+01	101016	3	4	340
1.3400E+06	3.2500E+01	1.4100E+06	3.6000E+01	1.4800E+06	3.8600E+01	101016	3	4	341
1.5500E+06	4.2300E+01	1.6300E+06	4.6500E+01	1.7200E+06	5.0100E+01	101016	3	4	342
1.8100E+06	5.4500E+01	1.9000E+06	5.9000E+01	2.0000E+06	6.3000E+01	101016	3	4	343
2.1000E+06	6.7000E+01	2.2100E+06	7.2000E+01	2.3200E+06	7.3500E+01	101016	3	4	344
2.4400E+06	7.5000E+01	2.5600E+06	8.2400E+01	2.6900E+06	9.0900E+01	101016	3	4	345
2.8300E+06	9.5500E+01	2.9700E+06	9.9000E+01	3.1300E+06	1.0200E+02	101016	3	4	346
3.2900E+06	1.0500E+02	3.4600E+06	1.0900E+02	3.6400E+06	1.1300E+02	101016	3	4	347
3.8200E+06	1.1700E+02	4.0200E+06	1.1900E+02	4.2300E+06	1.2200E+02	101016	3	4	348
4.4400E+06	1.2300E+02	4.6700E+06	1.2500E+02	4.9100E+06	1.2600E+02	101016	3	4	349
5.1600E+06	1.2700E+02	5.4300E+06	1.2800E+02	5.7000E+06	1.2900E+02	101016	3	4	350
6.0000E+06	1.2900E+02	6.3000E+06	1.2800E+02	6.6300E+06	1.2800E+02	101016	3	4	351
6.9700E+06	1.2700E+02	7.3300E+06	1.2600E+02	7.7000E+06	1.2600E+02	101016	3	4	352
8.1000E+06	1.2500E+02	8.5100E+06	1.2400E+02	8.9500E+06	1.2300E+02	101016	3	4	353
9.4100E+06	1.2200E+02	9.8900E+06	1.2100E+02	1.0400E+07	1.2000E+02	101016	3	4	354
1.0900E+07	1.1900E+02	1.1500E+07	1.1700E+02	1.2100E+07	1.1450E+02	101016	3	4	355
1.2700E+07	1.1100E+02	1.3300E+07	1.0500E+02	1.4000E+07	9.9300E+01	101016	3	4	356
1.4750E+07	9.5000E+01	1.5500E+07	9.0800E+01	1.6300E+07	8.7300E+01	101016	3	4	357
1.7100E+07	8.3500E+01	1.8000E+07	7.9000E+01			1016	3	4	358
0.0	0.0	0	0			01016	3	0	359
22000.0	4.7468E+01	0	0	0		01016	3	16	360
0.0	-1.1310E+07	0	0	2		101016	3	16	361
2	2	10	5			1016	3	16	362
1.1500E+07	0.0000E+00	1.2100E+07	5.0000E+03	1.2700E+07	2.0000E+02	101016	3	16	363
1.3300E+07	6.0000E+02	1.4000E+07	1.0700E+01	1.4750E+07	1.4000E+01	101016	3	16	364
1.5500E+07	1.6200E+01	1.6300E+07	1.8500E+01	1.7100E+07	2.0600E+01	101016	3	16	365
1.8000E+07	2.3900E+01					1016	3	16	366
0.0	0.0	0	0	0		01016	3	0	367
22000.0	4.7468E+01	0	0	0		01016	3	102	368
0.0	8.5170E+06	0	0	1		2021016	3	102	369
202	5					1016	3	102	370
1.0000E+03	3.0683E+01	1.5000E+00	7.9220E+01	2.0000E+00	6.8610E+01	101016	3	102	371
4.0000E+00	4.8510E+01	6.0000E+00	3.9610E+01	8.0000E+00	3.4300E+01	101016	3	102	372

1.0000E+01	3.0680E-01	4.0000E+01	1.5340E-01	1.0000E+02	9.7000E-02	1016	3102	373
2.0000E+02	6.8800E-02	4.0300E+02	4.8600E-02	6.0100E+02	3.9900E-02	1016	3102	374
8.1200E+02	3.4500E-02	1.0420E+03	3.0600E-02	1.2700E+03	2.7800E-02	1016	3102	375
1.4800E+03	2.6000E-02	1.7200E+03	2.4300E-02	2.0000E+03	2.3000E-02	1016	3102	376
2.1000E+03	2.2600E-02	2.5000E+03	2.2500E-02	2.7000E+03	2.4900E-02	1016	3102	377
2.8300E+03	3.1200E-02	2.9500E+03	5.8800E-02	3.0100E+03	1.1700E-01	1016	3102	378
3.0300E+03	1.5380E-01	3.0500E+03	1.9260E-01	3.0700E+03	2.0990E-01	1016	3102	379
3.0900E+03	1.8940E-01	3.1100E+03	1.4960E-01	3.1300E+03	1.1320E-01	1016	3102	380
3.2000E+03	5.2000E-02	3.3000E+03	3.1200E-02	3.4000E+03	2.6000E-02	1016	3102	381
3.5500E+03	2.6200E-02	3.7000E+03	4.2100E-02	3.7500E+03	6.2400E-02	1016	3102	382
3.7900E+03	9.1000E-02	3.8100E+03	1.0490E-01	3.8300E+03	1.1020E-01	1016	3102	383
3.8500E+03	1.0340E-01	3.8700E+03	8.8700E-02	3.8900E+03	7.3000E-02	1016	3102	384
3.9100E+03	5.9800E-02	3.9900E+03	3.3100E-02	4.1200E+03	2.2000E-02	1016	3102	385
4.1800E+03	2.0100E-02	4.2600E+03	1.8600E-02	4.5500E+03	1.6400E-02	1016	3102	386
4.9600E+03	1.5200E-02	6.5100E+03	1.3500E-02	7.9100E+03	2.0000E-02	1016	3102	387
8.0200E+03	3.4500E-02	8.0500E+03	4.1600E-02	9.0900E+03	5.3300E-02	1016	3102	388
8.1100E+03	5.5900E-02	8.1300E+03	5.4700E-02	9.1700E+03	4.6900E-02	1016	3102	389
8.2000E+03	4.3400E-02	8.2400E+03	4.8200E-02	8.2600E+03	5.6900E-02	1016	3102	390
8.2800E+03	7.2200E-02	8.3000E+03	9.2000E-02	9.3200E+03	1.0220E-01	1016	3102	391
8.3400E+03	8.9700E-02	8.3600E+03	6.7900E-02	9.3800E+03	5.0600E-02	1016	3102	392
8.4000E+03	3.9300E-02	8.5600E+03	1.7300E-02	9.6700E+03	1.5000E-02	1016	3102	393
9.2500E+03	1.2800E-02	1.0250E+04	1.4100E-02	1.0430E+04	2.6500E-02	1016	3102	394
1.0480E+04	6.8500E-02	1.0500E+04	1.1210E-01	1.0510E+04	1.2270E-01	1016	3102	395
1.0520E+04	1.1180E-01	1.0540E+04	6.8200E-02	1.0580E+04	3.0000E-02	1016	3102	396
1.0800E+04	1.3900E-02	1.0950E+04	1.3300E-02	1.1160E+04	1.3100E-02	1016	3102	397
1.1500E+04	1.3400E-02	1.1770E+04	1.4200E-02	1.2000E+04	2.0800E-02	1016	3102	398
1.2060E+04	3.6100E-02	1.2080E+04	5.0000E-02	1.2100E+04	7.1600E-02	1016	3102	399
1.2120E+04	8.5700E-02	1.2140E+04	7.1400E-02	1.2160E+04	4.9900E-02	1016	3102	400
1.2180E+04	3.6000E-02	1.2320E+04	1.6800E-02	1.2740E+04	2.8100E-02	1016	3102	401
1.2770E+04	4.1200E-02	1.2790E+04	5.8200E-02	1.2810E+04	7.8500E-02	1016	3102	402
1.2820E+04	8.2300E-02	1.2830E+04	7.8300E-02	1.2850E+04	5.8000E-02	1016	3102	403
1.2870E+04	4.1000E-02	1.2900E+04	2.8000E-02	1.3050E+04	1.6400E-02	1016	3102	404
1.3100E+04	1.5800E-02	1.3300E+04	1.5100E-02	1.3390E+04	1.5000E-02	1016	3102	405
1.3470E+04	1.5100E-02	1.3650E+04	1.5200E-02	1.5000E+04	1.7200E-02	1016	3102	406
1.5620E+04	1.8300E-02	1.6190E+04	2.2400E-02	1.6300E+04	2.9500E-02	1016	3102	407
1.6360E+04	3.8400E-02	1.6380E+04	4.1000E-02	1.6400E+04	4.2000E-02	1016	3102	408
1.6420E+04	4.0900E-02	1.6440E+04	3.8300E-02	1.6500E+04	2.9400E-02	1016	3102	409
1.6540E+04	2.5800E-02	1.7270E+04	1.8800E-02	1.8020E+04	2.6800E-02	1016	3102	410
1.8060E+04	3.2500E-02	1.8100E+04	3.6500E-02	1.8140E+04	3.2300E-02	1016	3102	411
1.8180E+04	2.6400E-02	1.8240E+04	2.1500E-02	1.9020E+04	1.5700E-02	1016	3102	412
1.9750E+04	1.4700E-02	2.0290E+04	1.4700E-02	2.0750E+04	2.7900E-02	1016	3102	413
2.0780E+04	3.4400E-02	2.0800E+04	3.6500E-02	2.0820E+04	3.4500E-02	1016	3102	414
2.0850E+04	2.8300E-02	2.1040E+04	1.8300E-02	2.1200E+04	1.9200E-02	1016	3102	415
2.1380E+04	2.2300E-02	2.1590E+04	3.0100E-02	2.1700E+04	3.7700E-02	1016	3102	416
2.1750E+04	4.2600E-02	2.1810E+04	5.0300E-02	2.1870E+04	6.0500E-02	1016	3102	417
2.1900E+04	6.6800E-02	2.1950E+04	7.9400E-02	2.1990E+04	9.1400E-02	1016	3102	418
2.2010E+04	9.7900E-02	2.2070E+04	1.1860E-01	2.2100E+04	1.2830E-01	1016	3102	419
2.2150E+04	1.4050E-01	2.2180E+04	1.4390E-01	2.2200E+04	1.4410E-01	1016	3102	420
2.2250E+04	1.3770E-01	2.2300E+04	1.2360E-01	2.2400E+04	8.9600E-02	1016	3102	421
2.2500E+04	6.3000E-02	2.4000E+04	4.3000E-02	2.5350E+04	3.2500E-02	1016	3102	422
2.7810E+04	2.5000E-02	3.0900E+04	1.9000E-02	3.4000E+04	1.5100E-02	1016	3102	423
3.7020E+04	1.2500E-02	4.1900E+04	1.0200E-02	4.8750E+04	8.2000E-03	1016	3102	424
5.4300E+04	7.1000E-03	5.8900E+04	6.5000E-03	6.3500E+04	6.1000E-03	1016	3102	425
6.9900E+04	5.7000E-03	7.7700E+04	5.4000E-03	9.1700E+04	5.3000E-03	1016	3102	426
8.9900E+04	5.2000E-03	1.0220E+05	5.2000E-03	1.2070E+05	5.1000E-03	1016	3102	427
1.5170E+05	5.0000E-03	1.8910E+05	4.9000E-03	2.2100E+05	4.6000E-03	1016	3102	428
2.8400E+05	4.6000E-03	3.4700E+05	4.4000E-03	4.4500E+05	4.2000E-03	1016	3102	429
6.3200E+05	3.8000E-03	8.1200E+05	3.5000E-03	8.9700E+05	3.4000E-03	1016	3102	430
9.4300E+05	3.2000E-03	9.9100E+05	2.9100E-03	1.0960E+06	2.0500E-03	1016	3102	431
1.2100E+06	1.1000E-03	1.4800E+06	5.5000E-04	1.5500E+06	6.1200E-04	1016	3102	432
1.6300E+06	5.8000E-04	1.8100E+06	5.4800E-04	2.0000E+06	5.4000E-04	1016	3102	433
2.2100E+06	5.1000E-04	2.3200E+06	4.7800E-04	2.4400E+06	3.9500E-04	1016	3102	434

2,5600E+06	3,3500E-04	2,9700E+06	2,5000E-04	3,8200E+06	1,4500E-04	1016	3102	435
4,6700E+06	1,0500E-04	5,7000E+06	6,8000E-05	5,6300E+06	5,1000E-05	1016	3102	436
8,1000E+06	3,8000E-05	1,0400E+07	2,9000E-05	1,4000E+07	2,4000E-05	1016	3102	437
1,8000E+07	2,2000E-05					1016	3102	438
0,0	0,0	0	0	0		01016	3	0
22000,0	4,7468E+01	0	0	0		01016	3103	440
0,0	-2,1000E+06	0	0	2		431016	3103	441
2	2	43	5			1016	3103	442
2,2100E+06	0,0000E+00	2,3200E+06	1,0000E-04	2,4400E+06	3,0000E-04	1016	3103	443
2,5600E+06	6,0000E-04	2,6900E+06	9,0000E-04	2,8300E+06	1,0300E-03	1016	3103	444
2,9700E+06	1,2000E-03	3,1300E+06	1,4500E-03	3,2900E+06	1,8000E-03	1016	3103	445
3,4600E+06	2,2000E-03	3,6400E+06	2,7000E-03	3,8200E+06	3,2000E-03	1016	3103	446
4,0200E+06	3,9000E-03	4,2300E+06	4,8000E-03	4,4400E+06	6,0000E-03	1016	3103	447
4,6700E+06	7,4500E-03	4,9100E+06	9,4000E-03	5,1600E+06	1,1800E-02	1016	3103	448
5,4300E+06	1,4500E-02	5,7000E+06	1,8000E-02	6,0000E+06	2,2000E-02	1016	3103	449
6,3000E+06	2,6200E-02	6,6300E+06	3,1500E-02	6,9700E+06	3,6500E-02	1016	3103	450
7,3300E+06	4,3000E-02	7,7000E+06	4,9000E-02	8,1000E+06	5,5700E-02	1016	3103	451
8,5100E+06	6,3000E-02	8,9500E+06	7,1800E-02	9,4100E+06	7,9000E-02	1016	3103	452
9,8900E+06	8,5000E-02	1,0400E+07	9,6000E-02	1,0900E+07	1,0300E-01	1016	3103	453
1,1500E+07	1,1300E-01	1,2100E+07	1,2100E-01	1,2700E+07	1,2800E-01	1016	3103	454
1,3300E+07	1,2900E-01	1,4000E+07	1,3000E-01	1,4750E+07	1,2800E-01	1016	3103	455
1,5500E+07	1,2300E-01	1,6300E+07	1,1700E-01	1,7100E+07	1,0500E-01	1016	3103	456
1,8000E+07	9,2000E-02					1016	3103	457
0,0	0,0	0	0	0		01016	3	0
22000,0	4,7468E+01	0	0	0		01016	3107	459
0,0	-1,5190E+06	0	0	2		241016	3107	460
2	2	24	5			1016	3107	461
5,7000E+06	0,0000E+00	6,0000E+06	1,0000E-03	6,3000E+06	1,1000E-03	1016	3107	462
6,6300E+06	1,3000E-03	6,9700E+06	1,5000E-03	7,3300E+06	1,7200E-03	1016	3107	463
7,7000E+06	2,0500E-03	8,1000E+06	2,3500E-03	8,5100E+06	2,7000E-03	1016	3107	464
8,9500E+06	3,1500E-03	9,4100E+06	3,4700E-03	9,8900E+06	3,8800E-03	1016	3107	465
1,0400E+07	4,3000E-03	1,0900E+07	4,4200E-03	1,1500E+07	4,7500E-03	1016	3107	466
1,2100E+07	5,1000E-03	1,2700E+07	5,3000E-03	1,3300E+07	5,5900E-03	1016	3107	467
1,4000E+07	5,5900E-03	1,4750E+07	5,5700E-03	1,5500E+07	5,3800E-03	1016	3107	468
1,6300E+07	5,0700E-03	1,7100E+07	4,6300E-03	1,8000E+07	4,0000E-03	1016	3107	469
0,0	0,0	0	0	0		01016	3	0
22000,0	4,7468E+01	0	0	0		01016	3251	471
0,0	0,0	0	0	1		231016	3251	472
23	3					1016	3251	473
1,0000E-03	1,4045E-02	1,1500E+03	1,4045E-02	9,9100E+03	1,8043E-02	1016	3251	474
2,5700E+04	2,5042E-02	5,1800E+04	3,6025E-02	1,0420E+05	5,8948E-02	1016	3251	475
2,0000E+05	9,9755E-02	5,1800E+05	2,6570E-01	9,9100E+05	2,6154E-01	1016	3251	476
1,4800E+06	2,8173E-01	2,0000E+06	3,2941E-01	2,4400E+06	3,7359E-01	1016	3251	477
2,9700E+06	4,5609E-01	3,4600E+06	5,2774E-01	4,0200E+06	5,9830E-01	1016	3251	478
4,9100E+06	6,9160E-01	6,0000E+06	7,5498E-01	6,9700E+06	7,8779E-01	1016	3251	479
8,1000E+06	7,9973E-01	8,9500E+06	8,0689E-01	1,0900E+07	8,0079E-01	1016	3251	480
1,4000E+07	7,9599E-01	1,8000E+07	7,9565E-01			1016	3251	481
0,0	0,0	0	0	0		01016	3	0
22000,0	4,7468E+01	0	0	0		01016	3252	483
0,0	0,0	0	0	1		231016	3252	484
23	3					1016	3252	485
1,0000E-03	4,1548E-02	1,1500E+03	4,1548E-02	9,9100E+03	4,1380E-02	1016	3252	486
2,5700E+04	4,1085E-02	5,1800E+04	4,0622E-02	1,0420E+05	3,9656E-02	1016	3252	487
2,0000E+05	3,7936E-02	5,1800E+05	3,0945E-02	9,9100E+05	3,1122E-02	1016	3252	488
1,4800E+06	3,0273E-02	2,0000E+06	2,8264E-02	2,4400E+06	2,6408E-02	1016	3252	489
2,9700E+06	2,2934E-02	3,4600E+06	1,9917E-02	4,0200E+06	1,6948E-02	1016	3252	490
4,9100E+06	1,3027E-02	6,0000E+06	1,0373E-02	6,9700E+06	9,0083E-03	1016	3252	491
8,1000E+06	8,5278E-03	8,9500E+06	8,2437E-03	1,0900E+07	8,5532E-03	1016	3252	492
1,4000E+07	8,8629E-03	1,8000E+07	9,0586E-03			1016	3252	493
0,0	0,0	0	0	0		01016	3	0
22000,0	4,7468E+01	0	0	0		01016	3253	495
0,0	0,0	0	0	1		231016	3253	496

23	3				1016	3253	497
1.0000E-03	2.7895E-02	1.1500E+03	2.7895E-02	9.9100E+03	2.7838E-02	1016 3253	497
2.5700E+04	2.7738E-02	5.1800E+04	2.7593E-02	1.0420E+05	2.7322E-02	1016 3253	499
2.0000E+05	2.6869E-02	5.1800E+05	2.4876E-02	9.9100E+05	2.6533E-02	1016 3253	500
1.4800E+06	2.7234E-02	2.0000E+06	2.5253E-02	2.4400E+06	2.7084E-02	1016 3253	501
2.9700E+06	2.5876E-02	3.4600E+06	2.4323E-02	4.0200E+06	2.2546E-02	1016 3253	502
4.9100E+06	1.9586E-02	6.0000E+06	1.7638E-02	6.9700E+06	1.6594E-02	1016 3253	503
8.1000E+06	1.7670E-02	8.9500E+06	1.8012E-02	1.0900E+07	1.9690E-02	1016 3253	504
1.4000E+07	1.9450E-02	1.8000E+07	1.7551E-02			1016 3253	505
0.0	0.0	0	0	0		1016 3	0 506
0.0	0.0	0	0	0		1016 0	0 507
22000.0	4.7468E+01	1	1	0		1016 4	2 508
0.0	4.7468E+01	0	2	169		121016 4	2 509
1.0000E+00	1.4040E-02	9.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	1016 4	2 510
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1016 4	2 511
0.0000E+00	0.0000E+00	9.9973E-01	2.5280E-02	3.0000E-04	0.0000E+00	1016 4	2 512
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1016 4	2 513
0.0000E+00	0.0000E+00	0.0000E+00	-1.4040E-02	9.9930E-01	3.6100E-02	1016 4	2 514
6.3000E-04	1.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1016 4	2 515
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	2.7000E-04	-2.5260E-02	1016 4	2 516
9.9864E-01	4.6780E-02	1.0800E-03	2.0000E-05	0.0000E+00	0.0000E+00	1016 4	2 517
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	-1.0000E-05	1016 4	2 518
6.1000E-04	-3.6070E-02	9.9775E-01	5.7390E-02	1.6300E-03	3.0000E-05	1016 4	2 519
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1016 4	2 520
0.0000E+00	-1.0000E-05	1.0600E-03	-4.6740E-02	9.9665E-01	6.7950E-02	1016 4	2 521
2.2900E-03	5.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1016 4	2 522
0.0000E+00	0.0000E+00	0.0000E+00	-3.0000E-05	1.6100E-03	-5.7320E-02	1016 4	2 523
9.9532E-01	7.8470E-02	3.0700E-03	8.0000E-09	0.0000E+00	0.0000E+00	1016 4	2 524
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	-5.0000E-05	1016 4	2 525
2.2800E-03	-6.7850E-02	9.9377E-01	8.8950E-02	3.9500E-03	1.1000E-04	1016 4	2 526
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1016 4	2 527
0.0000E+00	-8.0000E-05	3.0500E-03	-7.8340E-02	9.9200E-01	9.9390E-02	1016 4	2 528
4.9400E-03	1.6000E-04	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1016 4	2 529
0.0000E+00	0.0000E+00	0.0000E+00	-1.1000E-04	3.9300E-03	-8.8780E-02	1016 4	2 530
9.9001E-01	1.0980E-01	6.0400E-03	2.2000E-04	0.0000E+00	0.0000E+00	1016 4	2 531
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	-1.6000E-04	1016 4	2 532
4.9300E-03	-9.9180E-02	9.8780E-01	1.2017E-01	7.2600E-03	0.0000E+00	1016 4	2 533
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1016 4	2 534
1.0000E-05	-2.2000E-04	6.0300E-03	-1.0954E-01	9.8538E-01	1.3050E-01	1016 4	2 535
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1016 4	2 536
0.0000E+00	0.0000E+00	1.0000E-05	-2.9000E-04	7.2400E-03	-1.1986E-01	1016 4	2 537
9.8274E-01						1016 4	2 538
0.0	0.0	0	0	1		231016 4	2 539
23	3					1016 4	2 540
0.0	1.0000E-03	0	0	1		1016 4	2 541
0.0000E+00						1016 4	2 542
0.0	1.1500E+03	0	0	1		1016 4	2 543
0.0000E+00						1016 4	2 544
0.0	9.9100E+03	0	0	1		1016 4	2 545
4.0000E-03						1016 4	2 546
0.0	2.5700E+04	0	0	1		1016 4	2 547
1.1000E-02						1016 4	2 548
0.0	5.1800E+04	0	0	2		1016 4	2 549
2.2000E-02	1.0000E-03					1016 4	2 550
0.0	1.0420E+05	0	0	2		1016 4	2 551
4.5000E-02	6.0000E-03					1016 4	2 552
0.0	2.0000E+05	0	0	2		1016 4	2 553
8.6000E-02	1.9000E-02					1016 4	2 554
0.0	5.1800E+05	0	0	3		1016 4	2 555
2.5300E-01	9.1000E-02	-2.0000E-03				1016 4	2 556
0.0	9.9100E+05	0	0	3		1016 4	2 557
2.5000E-01	1.7300E-01	-8.0000E-03				1016 4	2 558

0.0	1.4800E+06	0	0	4	01016	4	2	559	
2.7100E-01	2.3100E-01	2.0000E-03	5.0000E-03		1016	4	2	560	
0.0	2.0000E+06	0	0	5	01016	4	2	561	
3.1800E-01	1.8700E-01	5.0000E-02	1.7000E-02	1.0000E-03	1016	4	2	562	
0.0	2.4400E+06	0	0	6	01016	4	2	563	
3.6400E-01	3.2200E-01	1.0300E-01	3.1000E-02	3.0000E-03	1.0000E-03	1016	4	2	564
0.0	2.9700E+06	0	0	8	01016	4	2	565	
4.4700E-01	3.6300E-01	1.6200E-01	4.9000E-02	8.0000E-03	2.0000E-03	1016	4	2	566
-1.0000E-03	-1.0000E-03				1016	4	2	567	
0.0	3.4600E+06	0	0	8	01016	4	2	568	
5.1900E-01	3.9300E-01	2.0800E-01	7.0000E-02	1.5000E-02	2.0000E-03	1016	4	2	569
-2.0000E-03	-2.0000E-03				1016	4	2	570	
0.0	4.0200E+06	0	0	8	01016	4	2	571	
5.9000E-01	4.3100E-01	2.5800E-01	9.8000E-02	2.5000E-02	3.0000E-03	1016	4	2	572
-3.0000E-03	-2.0000E-03				1016	4	2	573	
0.0	4.9100E+06	0	0	8	01016	4	2	574	
6.8400E-01	4.9500E-01	3.2200E-01	1.4200E-01	4.4000E-02	1.0000E-02	1016	4	2	575
0.0000E+00	-1.0000E-03				1016	4	2	576	
0.0	6.0000E+06	0	0	8	01016	4	2	577	
7.4800E-01	5.6200E-01	3.8200E-01	2.0200E-01	7.3000E-02	2.6000E-02	1016	4	2	578
7.0000E-03	1.0000E-03				1016	4	2	579	
0.0	6.9700E+06	0	0	8	01016	4	2	580	
7.8100E-01	6.0300E-01	4.2700E-01	2.5000E-01	1.0900E-01	4.7000E-02	1016	4	2	581
1.7000E-02	4.0000E-03				1016	4	2	582	
0.0	8.1000E+06	0	0	8	01016	4	2	583	
7.9300E-01	6.4000E-01	4.6500E-01	3.0000E-01	1.5200E-01	7.8000E-02	1016	4	2	584
3.2000E-02	9.0000E-03				1016	4	2	585	
0.0	8.9500E+06	0	0	8	01016	4	2	586	
8.0000E-01	6.5700E-01	4.8900E-01	3.3100E-01	1.8300E-01	1.0100E-01	1016	4	2	587
4.7000E-02	1.4000E-02				1016	4	2	588	
0.0	1.0900E+07	0	0	8	01016	4	2	589	
7.9300E-01	6.7000E-01	5.3000E-01	3.8800E-01	2.5300E-01	1.6000E-01	1016	4	2	590
9.6000E-02	4.0000E-02				1016	4	2	591	
0.0	1.4000E+07	0	0	10	01016	4	2	592	
7.8534E-01	6.5529E-01	5.3898E-01	4.3230E-01	3.1697E-01	2.3359E-01	1016	4	2	593
1.6993E-01	1.0078E-01	4.7130E-02	1.3440E-02			1016	4	2	594
0.0	1.8000E+07	0	0	12	01016	4	2	595	
7.8035E-01	6.1867E-01	5.1967E-01	4.4766E-01	3.7231E-01	3.0582E-01	1016	4	2	596
2.5061E-01	1.8984E-01	1.1253E-01	5.0380E-02	1.9530E-02	5.9800E-03	1016	4	2	597
0.0	0.0	0	0	0	01016	4	0	598	
0.0	0.0	0	0	0	01016	0	0	599	
22000.0	4.7468E+01	0	0	5	01016	5	4	600	
0.0	9.9100E+05	0	3	1	161016	5	4	601	
16	3				1016	5	4	602	
9.9100E+05	1.0000E+00	2.3200E+06	1.0000E+00	2.4400E+06	9.8000E-01	1016	5	4	603
2.5600E+06	8.9080E-01	2.6900E+06	8.0640E-01	2.8300E+06	7.6440E-01	1016	5	4	604
2.9700E+06	7.3740E-01	3.1300E+06	7.1370E-01	3.2900E+06	6.9140E-01	1016	5	4	605
3.4600E+06	6.6240E-01	3.6400E+06	6.3720E-01	3.8200E+06	6.1190E-01	1016	5	4	606
4.0200E+06	5.7640E-01	4.2300E+06	5.4670E-01	4.4400E+06	5.0000E-01	1016	5	4	607
4.6700E+06	0.0000E+00				1016	5	4	608	
0.0	2.3200E+06	0	3	1	151016	5	4	609	
15	3				1016	5	4	610	
2.3200E+06	0.0000E+00	2.4400E+06	2.0000E-02	2.5600E+06	3.0300E-02	1016	5	4	611
2.6900E+06	4.5100E-02	2.8300E+06	5.7600E-02	2.9700E+06	6.7700E-02	1016	5	4	612
3.1300E+06	7.6500E-02	3.2900E+06	8.6700E-02	3.4600E+06	9.7200E-02	1016	5	4	613
3.6400E+06	1.0620E-01	3.8200E+06	1.1710E-01	4.0200E+06	1.3110E-01	1016	5	4	614
4.2300E+06	1.4340E-01	4.4400E+06	1.5850E-01	4.6700E+06	0.0000E+00	1016	5	4	615
0.0	2.4400E+06	0	3	1	141016	5	4	616	
14	3				1016	5	4	617	
2.4400E+06	0.0000E+00	2.5600E+06	7.8900E-02	2.6900E+06	1.4850E-01	1016	5	4	618
2.8300E+06	1.7800E-01	2.9700E+06	1.9490E-01	3.1300E+06	2.0980E-01	1016	5	4	619
3.2900E+06	2.2190E-01	3.4600E+06	2.2940E-01	3.6400E+06	2.3360E-01	1016	5	4	620

3,8200E+06	2.3680E-01	4.0200E+06	2,4540E-01	4,2300E+06	2,5330E-01	1016	5	4	621
4,4400E+06	2.7560E-01	4.6700E+06	0.0000E+00			1016	5	4	622
0.0	3.2900E+06	0	3	1		81016	5	4	623
8	3					1016	5	4	624
3,2900E+06	0.0000E+00	3.4600E+06	1,1000E-02	3,6400E+06	2,3000E-02	21016	5	4	625
3,8200E+06	3.4200E-02	4.0200E+06	4,7100E-02	4,2300E+06	5.6600E-02	21016	5	4	626
4,4400E+06	6.5900E-02	4.6700E+06	0.0000E+00			1016	5	4	627
0.0	0.0	0	9	1		31016	5	4	628
3	3					1016	5	4	629
4,4400E+06	0.0000E+00	4.6700E+06	1.0000E+00	1,8000E+07	1,0000E+00	1016	5	4	630
0.0	0.0	0	0	1		31016	5	4	631
3	2					1016	5	4	632
4,4400E+06	9.5000E+05	1.0000E+07	1,1800E+06	1,8000E+07	1,5000E+06	1016	5	4	633
0.0	0.0	0	0	0		01016	5	0	634
22000.0	4,7468E+01	0	0	1		01016	5	16	635
0.0	0.0	0	9	1		21016	5	16	636
2	2					1016	5	16	637
1,1500E+07	1.0000E+00	1.8000E+07	1.0000E+00			1016	5	16	638
0.0	0.0	0	0	1		21016	5	16	639
2	2					1016	5	16	640
1,1500E+07	1.0000E+05	1.8000E+07	2,2750E+06			1016	5	16	641
0.0	0.0	0	0	0		01016	5	0	642
0.0	0.0	0	0	0		01016	0	0	643
22000.0	4,7468E+01	0	0	0		01016	7	4	644
0.0	0.0	0	0	12		11016	7	4	645
0,0000E+00	5,9300E+01	4,7468E+01	1,5000E+00	0.0		0,01016	7	4	646
1,0000E+00	4,1300E+00	4,7468E+01	0.0	0.0		0,01016	7	4	647
0.0	0.0	0	0	0		01016	7	0	648
0.0	0.0	0	0	0		01016	0	0	649
0.0	0.0	0	0	0		0	0	0	650

APPENDIX C
ENDF/B Listing for Vanadium

23000.0	5.0504E+01	0	0	0	01017	1451	1
0.0	0.0	0	0	56	01017	1451	2
VANADIUM CROSS SECTIONS MATERIAL 1017					1017	1451	3
THIS IS ESSENTIALLY A NEW EVALUATION,					1017	1451	4
THIS DATA WAS PREPARED BY E. PENNINGTON, A.N.L., IN SEPTEMBER 1966.					1017	1451	5
REVISIONS IN THE DATA WERE MADE IN JUNE 1967.					1017	1451	6
THE SOURCES OF THE DATA ARE AS FOLLOWS-					1017	1451	7
THE CAPTURE CROSS SECTION WAS TAKEN AS 1/V UP TO 1.5 EV., BASED					1017	1451	8
ON A VALUE OF 5.06 BARNs AT 0.0253 EV. FROM BNL-325, SUPPLEMENT 2,					1017	1451	9
VOL. IIA (REF. 1), FROM 1.5 EV. UP TO 22.5 KEV., THE CAPTURE CROSS					1017	1451	10
SECTION WAS CALCULATED FROM PARAMETERS FOR THE FIRST TWO					1017	1451	11
RESONANCES IN V-50 AND THE FIRST 6 RESONANCES IN V-51 AS GIVEN					1017	1451	12
IN REF. 1, ALONG WITH THE 1/V CONTRIBUTION REQUIRED TO AGREE WITH					1017	1451	13
THE EXPERIMENTAL CROSS SECTION AT 0.0253 EV, VALUES OF 0.60 AND					1017	1451	14
0.75 EV. WERE ASSUMED FOR GAMMA GAMMA FOR THE V-50 AND V-51					1017	1451	15
RESONANCES, RESPECTIVELY. THESE VALUES WERE SUGGESTED BY					1017	1451	16
KAPCHIGASHEV TO GIVE AGREEMENT WITH HIS BROAD RESOLUTION MEASURE-					1017	1451	17
MENTS OF CAPTURE CROSS SECTION SHOWN ON P. 23-0-3 OF REF. 1, ABOVE					1017	1451	18
22.5 KEV. UP TO 2 MEV., THE CAPTURE CROSS SECTION WAS READ FROM					1017	1451	19
THE SMOOTH CURVE FOR V-51 ON P. 23-51-5 OF REF. 1, A 1/E DEPENDENCE					1017	1451	20
WAS ASSUMED AT HIGHER ENERGIES.					1017	1451	21
THE TOTAL CROSS SECTION BELOW 100 EV. WAS CALCULATED AS THE SUM					1017	1451	22
OF CAPTURE AND SCATTERING CROSS SECTIONS. FROM 100 EV. TO ABOUT					1017	1451	23
2 KEV., SIGMA TOTAL WAS READ FROM BNL-325, SECOND EDITION, (JULY 1,					1017	1451	24
1958) (REF. 2), ABOVE 2 KEV. UP TO 220 KEV., VALUES WERE READ FROM					1017	1451	25
THE GRAPHS ON P. 23-0-3 AND 23-0-4 OF REF. 1. VALUES FROM REF. 2					1017	1451	26
WERE THEN USED UP TO ABOUT 0.4 MEV., FOLLOWED BY VALUES FROM					1017	1451	27
P. 23-0-5 AND 23-0-6 OF REF. 1 AT HIGHER ENERGIES, EXCEPT FOR THE					1017	1451	28
RANGE FROM 1.3 TO 2.0 MEV. IN WHICH REF. 2 VALUES WERE USED.					1017	1451	29
A VALUE OF 5.0 BARNs WAS USED FOR THE ELASTIC SCATTERING CROSS					1017	1451	30
SECTION BELOW 100 EV. AT ALL HIGHER ENERGIES, THE ELASTIC					1017	1451	31
SCATTERING CROSS SECTION WAS OBTAINED BY SUBTRACTING ALL OTHER					1017	1451	32
CROSS SECTIONS FROM THE TOTAL.					1017	1451	33
INELASTIC SCATTERING CROSS SECTIONS TO FOUR LEVELS WERE COMPUTED					1017	1451	34
UP TO 2.4 MEV. USING THE ABACUS 2-NEARREX OPTICAL MODEL CODE,					1017	1451	35
FROM 2.4 TO 5.0 MEV., THE INELASTIC CROSS SECTION WAS ESTIMATED.					1017	1451	36
ABOVE 5 MEV., CROSS SECTIONS FOR OTHER REACTIONS WERE SUBTRACTED					1017	1451	37
FROM THE OPTICAL MODEL REACTION CROSS SECTION.					1017	1451	38
NUCLEAR TEMPERATURES FOR UNRESOLVED INELASTIC SCATTERING WERE					1017	1451	39
CALCULATED AS IN YIFTAH-OKRENT-MOLDAUER.					1017	1451	40
THE (N,2N) CROSS SECTION WAS CALCULATED ACCORDING TO PEARLSTEIN-S					1017	1451	41
METHOD (N.S.E. 23, 238-250 (1965)), RENORMALIZED TO PASS THROUGH A					1017	1451	42
SINGLE EXPERIMENTAL POINT.					1017	1451	43
THE EXPERIMENTAL (N,P) CROSS SECTION FROM NUCLEAR DATA, SECTION A,					1017	1451	44
VOL. 1, NO. 2, (FEB. 1966) WAS USED, WITH THE LOW ENERGY PORTION BEING					1017	1451	45
ESTIMATED.					1017	1451	46
THE (N,ALPHA) CROSS SECTION WAS READ FROM THE SMOOTH CURVE ON					1017	1451	47
P. 23-51-8 OF REF. 1, WITH THE LOW ENERGY PORTION BEING ESTIMATED.					1017	1451	48
ELASTIC SCATTERING LEGENDRE COEFFICIENTS (C ₁) WERE DETERMINED					1017	1451	49
FROM EXPERIMENTAL DATA IN ANL-5800, 2ND EDITION, FIG. 2-61 (1963),					1017	1451	50
WITH INELASTIC SCATTERING CORRECTIONS, UP TO ABOUT 1.8 MEV. AT					1017	1451	51
HIGHER ENERGIES, COEFFICIENTS WERE DERIVED FROM THE OPTICAL MODEL					1017	1451	52
CALCULATIONS.					1017	1451	53
VALUES OF MU BAR LAB, XI, AND GAMMA WERE CALCULATED FROM THE					1017	1451	54
LEGENDRE COEFFICIENTS.					1017	1451	55
PARAMETERS FOR THE FREE GAS THERMAL SCATTERING LAW WERE INCLUDED.					1017	1451	56
NO RESONANCE PARAMETERS WERE INCLUDED AS SELF-SHIELDING OF THE					1017	1451	57
RESONANCES IS UNIMPORTANT.					1017	1451	58
0.0	0.0	0	0	0	01017	1 0	59
0.0	0.0	0	0	0	01017	0 0	60
23000.0	5.0504E+01	0	0	0	01017	3 1	61
0.0	0.0	0	0	1	4711017	3 1	62

471	5				1017	3	1	63
1.0000E-03	3.0451E+01	2.0000E-03	2.2997E+01	4.0000E-03	1.7726E+01	1017	3	64
6.0000E-03	1.5390E+01	8.0000E-03	1.3998E+01	1.0000E-02	1.3048E+01	1017	3	65
2.0000E-02	1.0691E+01	4.0000E-02	9.0242E+00	5.0000E-02	8.2857E+00	1017	3	66
8.0000E-02	7.8455E+00	1.0000E-01	7.5451E+00	2.0000E-01	6.7997E+00	1017	3	67
4.0000E-01	6.2726E+00	6.0000E-01	6.0390E+00	8.0000E-01	5.8998E+00	1017	3	68
1.0000E+00	5.8048E+00	1.5000E+00	5.6572E+00	1.0000E+01	5.2550E+00	1017	3	69
4.0000E+01	5.1283E+00	1.0000E+02	5.6000E+00	1.2000E+02	5.8000E+00	1017	3	70
1.3000E+02	5.9500E+00	1.4000E+02	6.2000E+00	1.5000E+02	6.7000E+00	1017	3	71
1.5500E+02	6.9500E+00	1.6000E+02	7.5000E+00	1.6700E+02	1.2800E+01	1017	3	72
1.7300E+02	9.5000E+00	1.8000E+02	7.5000E+00	1.9000E+02	6.2000E+00	1017	3	73
2.0000E+02	5.9000E+00	2.2000E+02	5.6000E+00	2.5000E+02	5.8000E+00	1017	3	74
3.0000E+02	6.0000E+00	4.0000E+02	6.0500E+00	5.0000E+02	6.2000E+00	1017	3	75
8.0000E+02	6.3500E+00	1.0000E+03	6.7000E+00	1.2000E+03	7.4500E+00	1017	3	76
1.3000E+03	8.0500E+00	1.3500E+03	8.8000E+00	1.4000E+03	9.1000E+00	1017	3	77
1.4300E+03	9.5000E+00	1.4600E+03	9.3000E+00	1.5000E+03	8.8000E+00	1017	3	78
1.6000E+03	8.3000E+00	1.7000E+03	8.1500E+00	1.9000E+03	8.3000E+00	1017	3	79
2.2000E+03	9.0000E+00	2.5000E+03	1.0500E+01	2.8000E+03	1.3000E+01	1017	3	80
3.1000E+03	1.8000E+01	3.4000E+03	3.0000E+01	3.6000E+03	5.0000E+01	1017	3	81
4.0000E+03	2.2000E+02	4.1000E+03	3.2000E+02	4.1600E+03	3.8000E+02	1017	3	82
4.3200E+03	2.9000E+02	4.6000E+03	1.4000E+02	4.8000E+03	1.0000E+02	1017	3	83
5.0000E+03	9.0000E+01	5.2000E+03	8.0000E+01	5.4000E+03	7.5000E+01	1017	3	84
5.6000E+03	8.0000E+01	5.8000E+03	9.0000E+01	5.0000E+03	1.0000E+02	1017	3	85
6.2000E+03	1.1300E+02	6.5000E+03	1.4000E+02	6.8400E+03	1.7500E+02	1017	3	86
7.0000E+03	1.5500E+02	7.2000E+03	1.2000E+02	7.5000E+03	5.0000E+01	1017	3	87
8.0000E+03	1.1500E+01	8.2000E+03	9.2000E+00	8.6000E+03	1.4000E+01	1017	3	88
9.0000E+03	2.4000E+01	9.5000E+03	4.0000E+01	1.8000E+04	6.2000E+01	1017	3	89
1.0600E+04	8.8000E+01	1.0900E+04	9.5000E+01	1.1700E+04	1.0200E+02	1017	3	90
1.2200E+04	9.8000E+01	1.2500E+04	9.5000E+01	1.3200E+04	8.3000E+01	1017	3	91
1.4000E+04	6.5000E+01	1.5200E+04	4.0000E+01	1.5600E+04	3.7000E+01	1017	3	92
1.5900E+04	4.0000E+01	1.6100E+04	6.2000E+01	1.6300E+04	1.0500E+02	1017	3	93
1.6800E+04	2.4500E+01	1.7000E+04	8.0000E+01	1.7900E+04	4.0000E+01	1017	3	94
1.8300E+04	3.0000E+01	1.9200E+04	2.0000E+01	2.0000E+04	1.4000E+01	1017	3	95
2.0500E+04	1.0000E+01	2.1000E+04	6.1000E+00	2.1200E+04	5.0000E+00	1017	3	96
2.1400E+04	5.5000E+00	2.1700E+04	4.4000E+01	2.1900E+04	5.0000E+01	1017	3	97
2.2200E+04	4.6000E+01	2.2500E+04	3.4000E+01	2.3000E+04	2.6000E+01	1017	3	98
2.4000E+04	1.8500E+01	2.5000E+04	1.4500E+01	2.6000E+04	1.2000E+01	1017	3	99
2.7000E+04	1.0500E+01	2.8000E+04	9.0000E+00	2.9100E+04	7.3000E+00	1017	3	100
2.9300E+04	7.7000E+00	2.9600E+04	3.8000E+01	3.0000E+04	1.3000E+01	1017	3	101
3.0500E+04	8.6000E+00	3.2000E+04	6.8000E+00	3.3450E+04	5.5000E+00	1017	3	102
3.3650E+04	7.4000E+00	3.3800E+04	5.0000E+00	3.5000E+04	4.4000E+00	1017	3	103
3.6000E+04	3.6000E+00	3.7300E+04	2.5000E+00	3.7500E+04	3.8000E+00	1017	3	104
3.7900E+04	2.0000E+00	3.8900E+04	1.6000E+00	3.9300E+04	7.0000E+00	1017	3	105
3.9650E+04	3.2000E+01	4.0000E+04	1.5000E+01	4.0500E+04	8.5000E+00	1017	3	106
4.1000E+04	6.0000E+00	4.2000E+04	4.0000E+00	4.2250E+04	4.5000E+00	1017	3	107
4.2450E+04	8.7000E+00	4.2600E+04	3.4000E+00	4.4100E+04	2.1000E+00	1017	3	108
4.4400E+04	2.5000E+00	4.4900E+04	2.0000E+00	4.5300E+04	1.5000E+00	1017	3	109
4.5700E+04	8.5000E+01	4.5950E+04	2.9000E+01	4.6200E+04	8.5000E+01	1017	3	110
4.6500E+04	1.0500E+00	4.6800E+04	1.0000E+00	4.7200E+04	6.0000E+01	1017	3	111
4.7500E+04	3.4000E+01	4.7600E+04	3.8000E+01	4.7900E+04	2.6000E+00	1017	3	112
4.8150E+04	2.0000E+01	4.8450E+04	2.1000E+00	4.8800E+04	1.9000E+00	1017	3	113
4.9100E+04	4.3000E+00	4.9500E+04	1.9000E+01	4.9600E+04	2.1000E+01	1017	3	114
4.9700E+04	1.9000E+01	5.0100E+04	6.0000E+00	5.0800E+04	2.1000E+00	1017	3	115
5.1000E+04	1.4500E+00	5.1400E+04	6.5000E+01	5.1700E+04	2.9000E+00	1017	3	116
5.2000E+04	1.7000E+01	5.2150E+04	7.2000E+00	5.2300E+04	5.0000E+00	1017	3	117
5.3000E+04	2.2000E+01	5.3250E+04	2.1000E+01	5.3900E+04	8.0000E+00	1017	3	118
5.4600E+04	4.2000E+00	5.5700E+04	1.8500E+00	5.6400E+04	9.0000E+01	1017	3	119
5.7000E+04	4.5000E+01	5.7800E+04	2.6000E+01	5.8400E+04	2.4000E+01	1017	3	120
5.9000E+04	2.9000E+01	5.9400E+04	4.8000E+01	5.9800E+04	1.0000E+00	1017	3	121
6.0000E+04	2.0000E+00	6.1500E+04	7.7000E+00	6.2800E+04	1.8500E+01	1017	3	122
6.4000E+04	1.9500E+01	6.6000E+04	1.6000E+01	6.8500E+04	2.4000E+01	1017	3	123
7.0000E+04	1.8000E+01	7.2000E+04	8.0000E+00	7.5000E+04	4.2000E+00	1017	3	124

7.8000E+04	3.0000E+00	7.8500E+04	4.0000E+00	7.9000E+04	3.0000E+00	1017	3	1	125
8.0500E+04	3.4000E+00	8.1200E+04	4.8000E+00	8.2300E+04	1.6000E+01	1017	3	1	126
8.3500E+04	3.5000E+00	8.4500E+04	2.3500E+00	8.6000E+04	6.8000E+00	1017	3	1	127
8.7500E+04	1.5500E+01	8.9000E+04	1.0000E+01	9.2300E+04	2.6500E+00	1017	3	1	128
9.3000E+04	4.0000E+00	9.4000E+04	2.0000E+00	9.5000E+04	3.0000E+00	1017	3	1	129
9.6500E+04	1.4000E+00	9.7500E+04	1.4000E+00	9.8500E+04	2.0000E+00	1017	3	1	130
9.9500E+04	8.3000E-01	1.0150E+05	1.0500E+00	1.0300E+05	9.0000E-01	1017	3	1	131
1.0350E+05	1.8500E+00	1.0450E+05	1.3500E+00	1.0600E+05	2.0000E+00	1017	3	1	132
1.0950E+05	3.5000E+00	1.1050E+05	8.4000E+00	1.1150E+05	5.9000E+00	1017	3	1	133
1.1450E+05	9.0000E+00	1.1650E+05	9.6000E+00	1.1700E+05	7.9000E+00	1017	3	1	134
1.1850E+05	1.2500E+01	1.2000E+05	1.1000E+01	1.2500E+05	9.0000E+00	1017	3	1	135
1.2600E+05	7.6000E+00	1.2700E+05	8.3000E+00	1.2900E+05	6.7000E+00	1017	3	1	136
1.3000E+05	5.0000E+00	1.3100E+05	3.0000E+00	1.3230E+05	6.5000E-01	1017	3	1	137
1.3350E+05	4.0000E+00	1.3400E+05	8.0000E+00	1.3500E+05	1.0000E+01	1017	3	1	138
1.3700E+05	7.1000E+00	1.3950E+05	7.0000E+00	1.4100E+05	8.4000E+00	1017	3	1	139
1.4250E+05	5.2000E+00	1.4450E+05	1.8000E+00	1.4550E+05	6.4000E+00	1017	3	1	140
1.4600E+05	6.0000E+00	1.4800E+05	2.5000E+00	1.5000E+05	5.0000E-01	1017	3	1	141
1.5150E+05	4.2000E+00	1.5250E+05	8.2000E+00	1.5350E+05	8.4000E+00	1017	3	1	142
1.5800E+05	2.3000E+00	1.6000E+05	9.0000E+00	1.6200E+05	9.7000E+00	1017	3	1	143
1.6500E+05	8.8000E+00	1.6850E+05	7.5000E+00	1.7000E+05	2.8000E+00	1017	3	1	144
1.7100E+05	4.0000E+00	1.7300E+05	6.6000E+00	1.7500E+05	3.8000E+00	1017	3	1	145
1.7650E+05	7.0000E+00	1.7850E+05	6.0000E+00	1.8350E+05	9.2000E+00	1017	3	1	146
1.8500E+05	6.0000E+00	1.8600E+05	3.5000E+00	1.8900E+05	1.0000E+01	1017	3	1	147
1.9250E+05	6.0000E+00	1.9600E+05	4.0000E+00	1.9800E+05	2.5000E+00	1017	3	1	148
1.9950E+05	5.7000E+00	2.0200E+05	7.4000E+00	2.0350E+05	7.5000E+00	1017	3	1	149
2.0700E+05	5.3000E+00	2.1000E+05	3.6000E+00	2.1150E+05	6.0000E+00	1017	3	1	150
2.1400E+05	3.0000E+00	2.1650E+05	2.0000E+00	2.1800E+05	1.3000E+00	1017	3	1	151
2.2000E+05	4.3000E-01	2.2500E+05	3.6000E+00	2.5000E+05	6.5000E+00	1017	3	1	152
2.7000E+05	3.3000E+00	2.8500E+05	5.0000E+00	3.0000E+05	5.4000E+00	1017	3	1	153
3.2600E+05	5.0000E+00	3.3500E+05	4.6500E+00	3.4500E+05	2.9500E+00	1017	3	1	154
3.5500E+05	4.4000E+00	3.6500E+05	4.8500E+00	3.9000E+05	3.1500E+00	1017	3	1	155
4.0000E+05	3.7500E+00	4.1400E+05	4.5000E+00	4.1900E+05	3.6000E+00	1017	3	1	156
4.2100E+05	4.2000E+00	4.2600E+05	2.2000E+00	4.3700E+05	4.4000E+00	1017	3	1	157
4.4100E+05	3.5500E+00	4.5000E+05	5.1000E+00	4.5500E+05	5.5000E+00	1017	3	1	158
4.6300E+05	5.0000E+00	4.6600E+05	2.8000E+00	4.7000E+05	2.5500E+00	1017	3	1	159
4.8200E+05	3.9000E+00	4.9000E+05	3.0000E+00	5.0000E+05	1.6000E+00	1017	3	1	160
5.0500E+05	4.3000E+00	5.2400E+05	2.3000E+00	5.3000E+05	2.8000E+00	1017	3	1	161
5.3500E+05	2.2500E+00	5.4000E+05	3.5000E+00	5.5000E+05	2.1500E+00	1017	3	1	162
5.5500E+05	1.8000E+00	5.6200E+05	2.0000E+00	5.7000E+05	4.3000E+00	1017	3	1	163
5.8000E+05	2.8000E+00	5.9000E+05	4.0200E+00	6.0000E+05	3.2500E+00	1017	3	1	164
6.0500E+05	3.7000E+00	6.1500E+05	3.4000E+00	6.3000E+05	1.7000E+00	1017	3	1	165
6.3700E+05	4.4000E+00	6.4400E+05	2.9500E+00	6.5100E+05	3.8000E+00	1017	3	1	166
6.5900E+05	3.2000E+00	6.6500E+05	4.5000E+00	6.7100E+05	2.5500E+00	1017	3	1	167
6.7600E+05	2.9000E+00	6.8100E+05	2.4000E+00	6.8700E+05	4.0000E+00	1017	3	1	168
6.9000E+05	4.3500E+00	6.9300E+05	4.0000E+00	7.0000E+05	2.9000E+00	1017	3	1	169
7.1000E+05	4.1000E+00	7.1700E+05	3.0000E+00	7.2400E+05	4.0000E+00	1017	3	1	170
7.3000E+05	2.6000E+00	7.3500E+05	3.9000E+00	7.4100E+05	3.0000E+00	1017	3	1	171
7.4600E+05	2.4000E+00	7.5200E+05	1.6500E+00	7.6200E+05	2.9300E+00	1017	3	1	172
7.7200E+05	1.9500E+00	7.8200E+05	3.8000E+00	7.9500E+05	1.9500E+00	1017	3	1	173
8.0000E+05	2.3000E+00	8.0200E+05	3.7000E+00	8.0800E+05	2.9000E+00	1017	3	1	174
8.1200E+05	4.0500E+00	8.1500E+05	2.5000E+00	8.2200E+05	2.3500E+00	1017	3	1	175
8.3000E+05	1.6500E+00	8.4800E+05	3.9000E+00	8.5600E+05	2.1500E+00	1017	3	1	176
8.6200E+05	3.4000E+00	8.7000E+05	5.0000E+00	8.8000E+05	3.3000E+00	1017	3	1	177
8.8600E+05	4.4000E+00	8.9000E+05	3.0000E+00	8.9500E+05	3.5000E+00	1017	3	1	178
9.0000E+05	2.7000E+00	9.0500E+05	4.4000E+00	9.1600E+05	2.2500E+00	1017	3	1	179
9.2000E+05	3.5000E+00	9.2500E+05	4.4000E+00	9.3600E+05	3.4000E+00	1017	3	1	180
9.4200E+05	3.8000E+00	9.4800E+05	2.5500E+00	9.5400E+05	3.7000E+00	1017	3	1	181
9.6100E+05	2.5500E+00	9.7000E+05	4.3000E+00	9.7500E+05	3.0500E+00	1017	3	1	182
9.8000E+05	4.3000E+00	9.8500E+05	3.1500E+00	9.9000E+05	3.0000E+00	1017	3	1	183
9.9500E+05	2.6000E+00	1.0000E+06	3.2000E+00	1.0020E+06	3.6500E+00	1017	3	1	184
1.0090E+06	3.2000E+00	1.0160E+06	3.9000E+00	1.0250E+06	2.5000E+00	1017	3	1	185
1.0300E+06	2.4500E+00	1.0350E+06	2.5000E+00	1.0410E+06	2.7000E+00	1017	3	1	186

1.0500E+06	2.3000E+00	1.0590E+06	3.2000E+00	1.0650E+06	2.6500E+00	1017	3	1	187
1.0710E+06	3.0000E+00	1.0770E+06	2.7000E+00	1.0900E+06	3.8000E+00	1017	3	1	188
1.1000E+06	3.1000E+00	1.1030E+06	2.8000E+00	1.1130E+06	4.5000E+00	1017	3	1	189
1.1250E+06	3.3500E+00	1.1310E+06	3.8000E+00	1.1400E+06	3.6000E+00	1017	3	1	190
1.1480E+06	3.0000E+00	1.1550E+06	4.4000E+00	1.1600E+06	3.0000E+00	1017	3	1	191
1.1700E+06	3.0000E+00	1.1760E+06	3.9000E+00	1.1820E+06	3.1000E+00	1017	3	1	192
1.1950E+06	4.2000E+00	1.2000E+06	3.8000E+00	1.2100E+06	3.1000E+00	1017	3	1	193
1.3000E+06	3.2800E+00	1.4000E+06	3.2925E+00	1.5000E+06	3.3000E+00	1017	3	1	194
1.6000E+06	3.3167E+00	1.6410E+06	3.3200E+00	1.7000E+06	3.3250E+00	1017	3	1	195
1.8000E+06	3.3416E+00	1.8490E+06	3.3480E+00	1.9000E+06	3.3550E+00	1017	3	1	196
2.0000E+06	2.8300E+00	2.0300E+06	3.1800E+00	2.0500E+06	3.2300E+00	1017	3	1	197
2.0600E+06	3.3100E+00	2.0800E+06	3.0700E+00	2.1000E+06	3.4800E+00	1017	3	1	198
2.1200E+06	3.5800E+00	2.1700E+06	3.3000E+00	2.2000E+06	3.4700E+00	1017	3	1	199
2.2200E+06	3.3400E+00	2.2700E+06	3.5600E+00	2.3100E+06	3.3500E+00	1017	3	1	200
2.3600E+06	3.5400E+00	2.4000E+06	3.6000E+00	2.4400E+06	3.8900E+00	1017	3	1	201
2.4800E+06	3.7400E+00	2.5200E+06	4.0000E+00	2.5500E+06	4.0800E+00	1017	3	1	202
2.6000E+06	3.9900E+00	2.6800E+06	3.7800E+00	2.7200E+06	3.7900E+00	1017	3	1	203
2.8000E+06	3.9000E+00	2.8400E+06	3.9200E+00	2.8800E+06	3.8700E+00	1017	3	1	204
2.9200E+06	3.7900E+00	2.9600E+06	3.7600E+00	3.0000E+06	3.7800E+00	1017	3	1	205
3.0600E+06	3.8600E+00	3.1200E+06	3.9400E+00	3.1500E+06	3.9600E+00	1017	3	1	206
3.2400E+06	3.9000E+00	3.2800E+06	3.9600E+00	3.3200E+06	3.9600E+00	1017	3	1	207
3.4000E+06	3.8600E+00	3.4600E+06	3.8200E+00	3.5000E+06	3.8000E+00	1017	3	1	208
3.5600E+06	3.8000E+00	3.7000E+06	3.8500E+00	3.7800E+06	3.8600E+00	1017	3	1	209
3.8600E+06	3.8350E+00	4.0000E+06	3.7700E+00	4.1000E+06	3.7800E+00	1017	3	1	210
4.2000E+06	3.8200E+00	4.2600E+06	3.8200E+00	4.4000E+06	3.7500E+00	1017	3	1	211
4.5000E+06	3.7300E+00	4.6000E+06	3.7350E+00	4.7000E+06	3.7600E+00	1017	3	1	212
4.7600E+06	3.7600E+00	4.9000E+06	3.7200E+00	5.0000E+06	3.6800E+00	1017	3	1	213
5.5000E+06	3.6400E+00	6.0000E+06	3.5600E+00	6.5000E+06	3.4500E+00	1017	3	1	214
7.0000E+06	3.3500E+00	7.5000E+06	3.2500E+00	8.0000E+06	3.1600E+00	1017	3	1	215
8.5000E+06	3.0600E+00	9.0000E+06	2.9650E+00	9.5000E+06	2.8800E+00	1017	3	1	216
1.0000E+07	2.8000E+00	1.0500E+07	2.7300E+00	1.1000E+07	2.6600E+00	1017	3	1	217
1.1040E+07	2.6540E+00	1.1500E+07	2.5900E+00	1.2000E+07	2.5300E+00	1017	3	1	218
1.2500E+07	2.4700E+00	1.3000E+07	2.4150E+00	1.3500E+07	2.3620E+00	1017	3	1	219
1.4000E+07	2.3200E+00	1.4500E+07	2.2800E+00	1.5000E+07	2.2400E+00	1017	3	1	220
0.0	0.0	0	0	0	0	1017	3	0	221
23000.0	5.0504E+01	0	0	0	0	1017	3	2	222
0.0	0.0	0	0	1	4541017	3	2	223	
454	5				1017	3	2	224	
1.0000E+03	5.0000E+00	1.5000E+00	5.0000E+00	4.0000E+01	5.0000E+00	1017	3	2	225
1.0000E+02	5.5166E+00	1.2000E+02	5.7215E+00	1.3000E+02	5.8720E+00	1017	3	2	226
1.4000E+02	6.1191E+00	1.5000E+02	6.6044E+00	1.5500E+02	6.8278E+00	1017	3	2	227
1.6000E+02	7.2776E+00	1.6700E+02	1.0044E+01	1.7300E+02	9.2363E+00	1017	3	2	228
1.8000E+02	7.3941E+00	1.9000E+02	6.1264E+00	2.0000E+02	5.8352E+00	1017	3	2	229
2.2000E+02	5.5420E+00	2.5000E+02	5.7467E+00	3.0000E+02	5.9516E+00	1017	3	2	230
4.0000E+02	6.0077E+00	6.0000E+02	6.1641E+00	8.0000E+02	6.3181E+00	1017	3	2	231
1.0000E+03	6.6703E+00	1.2000E+03	7.4212E+00	1.3000E+03	8.0203E+00	1017	3	2	232
1.3500E+03	8.7679E+00	1.4000E+03	9.0612E+00	1.4300E+03	9.4603E+00	1017	3	2	233
1.4600E+03	9.2650E+00	1.5000E+03	8.7693E+00	1.6000E+03	8.2721E+00	1017	3	2	234
1.7000E+03	8.1226E+00	1.9000E+03	8.2725E+00	2.2000E+03	8.9710E+00	1017	3	2	235
2.5000E+03	1.0468E+01	2.8000E+03	1.2962E+01	3.1000E+03	1.7951E+01	1017	3	2	236
3.4000E+03	2.9925E+01	3.6000E+03	4.9886E+01	4.0000E+03	2.1960E+02	1017	3	2	237
4.1000E+03	3.1948E+02	4.1600E+03	3.7947E+02	4.3200E+03	2.8963E+02	1017	3	2	238
4.6000E+03	1.3986E+02	4.8000E+03	9.9914E+01	5.0000E+03	8.9937E+01	1017	3	2	239
5.2000E+03	7.9948E+01	5.4000E+03	7.4952E+01	5.6000E+03	7.9952E+01	1017	3	2	240
5.8000E+03	8.9949E+01	6.0000E+03	9.9941E+01	5.2000E+03	1.1293E+02	1017	3	2	241
6.5000E+03	1.3990E+02	6.8400E+03	1.7489E+02	7.0000E+03	1.5490E+02	1017	3	2	242
7.2000E+03	1.1992E+02	7.5000E+03	4.9943E+01	8.0000E+03	1.1466E+01	1017	3	2	243
8.2000E+03	9.1703E+00	8.6000E+03	1.3976E+01	9.0000E+03	2.3978E+01	1017	3	2	244
9.5000E+03	3.9979E+01	1.0000E+04	6.1979E+01	1.0600E+04	8.7979E+01	1017	3	2	245
1.0900E+04	9.4979E+01	1.1700E+04	1.0198E+02	1.2200E+04	9.7981E+01	1017	3	2	246
1.2500E+04	9.4982E+01	1.3200E+04	8.2985E+01	1.4000E+04	6.4987E+01	1017	3	2	247
1.5200E+04	3.9985E+01	1.5600E+04	3.6975E+01	1.5900E+04	3.9941E+01	1017	3	2	248

1,6100E+04	6.1844E+01	1.6300E+04	1.0485E+02	1.6800E+04	2.4443E+011017	3	2	249
1,7000E+04	7.9279E+01	1.7900E+04	3.9990E+01	1,8300E+04	2,9992E+011017	3	2	250
1,9200E+04	1.9993E+01	2.0000E+04	1.3992E+01	2,0500E+04	9.9910E+001017	3	2	251
2,1000E+04	6.0874E+00	2.1200E+04	4.9843E+00	2,1400E+04	5.4792E+001017	3	2	252
2,1700E+04	4.3966E+01	2.1900E+04	4.9957E+01	2,2200E+04	4.5962E+011017	3	2	253
2,2500E+04	3.3977E+01	2.3000E+04	2.5978E+01	2,4000E+04	1.8481E+011017	3	2	254
2,5000E+04	1.4483E+01	2.6000E+04	1.1984E+01	2,7000E+04	1.0485E+011017	3	2	255
2,8000E+04	8.9855E+00	2.9100E+04	7.2862E+00	2,9300E+04	7.6863E+001017	3	2	256
2,9600E+04	3.7987E+01	3.0000E+04	1.2987E+01	3.0500E+04	8.5870E+001017	3	2	257
3,2000E+04	6.7877E+00	3.3450E+04	5.4883E+00	3,3650E+04	7.3884E+001017	3	2	258
3,3800E+04	4.9884E+00	3.5000E+04	4.3889E+00	3,6000E+04	3.5892E+001017	3	2	259
3,7300E+04	2.4896E+00	3.7500E+04	3.7896E+00	3,7900E+04	1.9898E+001017	3	2	260
3,8900E+04	1.5900E+00	3.9300E+04	6.9901E+00	3,9650E+04	3.1990E+011017	3	2	261
4,0000E+04	1.4990E+01	4.0500E+04	8.4904E+00	4,1000E+04	5.9905E+001017	3	2	262
4,2000E+04	3.9908E+00	4.2250E+04	4.4908E+00	4,2450E+04	8.6909E+001017	3	2	263
4,2600E+04	3.3909E+00	4.4100E+04	2.0912E+00	4,4400E+04	2.4912E+001017	3	2	264
4,4900E+04	1.9913E+00	4.5300E+04	1.4914E+00	4,5700E+04	8.4140E+011017	3	2	265
4,5950E+04	2.8150E-01	4.6200E+04	8.4150E-01	4,6500E+04	1.0415E+001017	3	2	266
4,6800E+04	9.9160E-01	4.7200E+04	5.9160E-01	4,7500E+04	3.3170E+011017	3	2	267
4,7600E+04	3.7170E-01	4.7900E+04	2.5917E+00	4,8150E+04	1.9992E+011017	3	2	268
4,8450E+04	2.0918E+00	4.8800E+04	1.8918E+00	4,9100E+04	4.2919E+001017	3	2	269
4,9500E+04	1.8992E+01	4.9600E+04	2.0992E+01	4,9700E+04	1.8992E+011017	3	2	270
5,0100E+04	5.9920E+00	5.0800E+04	2.0921E+00	5,1000E+04	1.4421E+001017	3	2	271
5,1400E+04	6.4210E-01	5.1700E+04	2.8921E+00	5,2000E+04	1.6992E+011017	3	2	272
5,2150E+04	7.1922E+00	5.2300E+04	4.9922E+00	5,3000E+04	2.1992E+011017	3	2	273
5,3250E+04	2.0992E+01	5.3900E+04	7.9923E+00	5,4600E+04	4.1924E+001017	3	2	274
5,5700E+04	1.8425E+00	5.6400E+04	8.9250E-01	5,7000E+04	4.4260E+011017	3	2	275
5,7800E+04	2.5260E-01	5.8400E+04	2.3270E-01	5,9000E+04	2.8270E+011017	3	2	276
5,9400E+04	4.7280E-01	5.9800E+04	9.9280E-01	6,0000E+04	1.9928E+001017	3	2	277
6,1500E+04	7.6929E+00	6.2800E+04	1.8493E+01	6,4000E+04	1.9493E+011017	3	2	278
6,6000E+04	1.5993E+01	6.8500E+04	2.3993E+01	7,0000E+04	1.7993E+011017	3	2	279
7,2000E+04	7.9933E+00	7.5000E+04	4.1934E+00	7,8000E+04	2.9935E+001017	3	2	280
7,8500E+04	3.9935E+00	7.9000E+04	2.9936E+00	8,0500E+04	3.3936E+001017	3	2	281
8,1200E+04	4.7936E+00	8.2300E+04	1.5994E+01	8,3500E+04	3.4936E+001017	3	2	282
8,4500E+04	2.3436E+00	8.6000E+04	6.7937E+00	8,7500E+04	1.5494E+011017	3	2	283
8,9000E+04	9.9937E+00	9.2300E+04	2.6437E+00	9,3000E+04	3.9937E+001017	3	2	284
9,4000E+04	1.9937E+00	9.5000E+04	2.9938E+00	9,6500E+04	1.3938E+001017	3	2	285
9,7500E+04	1.3938E+00	9.8500E+04	1.9938E+00	9,9500E+04	8.2380E+011017	3	2	286
1,0150E+05	1.0438E+00	1.0300E+05	8.9380E-01	1,0350E+05	1.8438E+001017	3	2	287
1,0450E+05	1.3438E+00	1.0600E+05	1.9938E+00	1,0950E+05	3.4939E+001017	3	2	288
1,1050E+05	8.3939E+00	1.1150E+05	5.8939E+00	1,1450E+05	8.9939E+001017	3	2	289
1,1650E+05	9.5939E+00	1.1700E+05	7.8939E+00	1,1850E+05	1.2494E+011017	3	2	290
1,2000E+05	1.0994E+01	1.2500E+05	8.9940E+00	1,2600E+05	7.5940E+001017	3	2	291
1,2700E+05	8.2940E+00	1.2900E+05	6.6940E+00	1,3000E+05	4.9940E+001017	3	2	292
1,3100E+05	2.9940E+00	1.3230E+05	6.4400E-01	1,3350E+05	3.9940E+001017	3	2	293
1,3400E+05	7.9940E+00	1.3500E+05	9.9941E+00	1,3700E+05	7.0941E+001017	3	2	294
1,3950E+05	6.9941E+00	1.4100E+05	8.3941E+00	1,4250E+05	5.1941E+001017	3	2	295
1,4450E+05	1.7942E+00	1.4550E+05	6.3942E+00	1,4600E+05	5.9942E+001017	3	2	296
1,4800E+05	2.4942E+00	1.5000E+05	4.9420E-01	1,5150E+05	4.1942E+001017	3	2	297
1,5250E+05	8.1942E+00	1.5350E+05	8.3942E+00	1,5800E+05	2.2943E+001017	3	2	298
1,6000E+05	8.9943E+00	1.6200E+05	9.6943E+00	1,6500E+05	8.7944E+001017	3	2	299
1,6850E+05	7.4944E+00	1.7000E+05	2.7944E+00	1,7100E+05	3.9945E+001017	3	2	300
1,7300E+05	6.5945E+00	1.7500E+05	3.7945E+00	1,7650E+05	6.9945E+001017	3	2	301
1,7850E+05	5.9946E+00	1.8350E+05	9.1946E+00	1,8500E+05	5.9946E+001017	3	2	302
1,8600E+05	3.4946E+00	1.8900E+05	9.9947E+00	1,9250E+05	5.9947E+001017	3	2	303
1,9600E+05	3.9948E+00	1.9800E+05	2.4948E+00	1,9950E+05	5.6948E+001017	3	2	304
2,0200E+05	7.3948E+00	2.0350E+05	7.4949E+00	2,0700E+05	5.2949E+001017	3	2	305
2,1000E+05	3.5950E+00	2.1150E+05	5.9950E+00	2,1400E+05	2.9950E+001017	3	2	306
2,1650E+05	1.9951E+00	2.1800E+05	1.2951E+00	2,2000E+05	4.2510E+011017	3	2	307
2,2500E+05	3.5952E+00	2.5000E+05	6.4955E+00	2,7000E+05	3.2958E+001017	3	2	308
2,8500E+05	4.9959E+00	3.0000E+05	5.3961E+00	3,2600E+05	4.9964E+001017	3	2	309
3,3500E+05	4.5765E+00	3.4500E+05	2.8365E+00	3,5500E+05	4.2567E+001017	3	2	310

3,6500E+05	4,6817E+00	3,9000E+05	2,9320E+00	4,0000E+05	3,5257E+001017	3	2	311
4,1400E+05	4,2712E+00	4,1900E+05	3,3692E+00	4,2100E+05	3,9682E+001017	3	2	312
4,2600E+05	1,9673E+00	4,3700E+05	4,1634E+00	4,4100E+05	3,3124E+001017	3	2	313
4,5000E+05	4,8594E+00	4,5500E+05	5,2575E+00	4,6300E+05	4,7546E+001017	3	2	314
4,6600E+05	2,5536E+00	4,7000E+05	2,3026E+00	4,8200E+05	3,6488E+001017	3	2	315
4,9000E+05	2,7458E+00	5,0000E+05	1,3429E+00	5,0500E+05	4,0419E+001017	3	2	316
5,2400E+05	2,0360E+00	5,3000E+05	2,5351E+00	5,3500E+05	1,9831E+001017	3	2	317
5,4000E+05	3,2321E+00	5,5000E+05	1,8791E+00	5,5500E+05	1,5282E+001017	3	2	318
5,6200E+05	1,7262E+00	5,7000E+05	4,0242E+00	5,8000E+05	2,5212E+001017	3	2	319
5,9000E+05	3,7383E+00	6,0000E+05	2,9658E+00	6,0500E+05	3,4143E+001017	3	2	320
6,1500E+05	3,1113E+00	6,3000E+05	1,4073E+00	6,3700E+05	4,1053E+001017	3	2	321
6,4400E+05	2,6533E+00	6,5100E+05	3,5013E+00	6,5900E+05	2,8984E+001017	3	2	322
6,6500E+05	4,1974E+00	6,7100E+05	2,2454E+00	6,7600E+05	2,5944E+001017	3	2	323
6,8100E+05	2,0924E+00	6,8700E+05	3,6914E+00	6,9000E+05	4,0404E+001017	3	2	324
6,9300E+05	3,6894E+00	7,0000E+05	2,5874E+00	7,1000E+05	3,7844E+001017	3	2	325
7,1700E+05	2,6834E+00	7,2400E+05	3,6814E+00	7,3000E+05	2,2794E+001017	3	2	326
7,3500E+05	3,5784E+00	7,4100E+05	2,6774E+00	7,4600E+05	2,0764E+001017	3	2	327
7,5200E+05	1,3244E+00	7,6200E+05	2,6024E+00	7,7200E+05	1,6194E+001017	3	2	328
7,8200E+05	3,4674E+00	7,9500E+05	1,6144E+00	8,0000E+05	1,9628E+001017	3	2	329
8,0200E+05	3,3624E+00	8,0800E+05	2,5614E+00	8,1200E+05	3,7104E+001017	3	2	330
8,1500E+05	2,1594E+00	8,2200E+05	2,0084E+00	8,3000E+05	1,3064E+001017	3	2	331
8,4800E+05	3,5524E+00	8,5600E+05	1,8014E+00	8,6200E+05	3,0504E+001017	3	2	332
8,7000E+05	4,6484E+00	8,8000E+05	2,9464E+00	8,8600E+05	4,0454E+001017	3	2	333
8,9000E+05	2,6444E+00	8,9500E+05	3,1434E+00	9,0000E+05	2,3424E+001017	3	2	334
9,0500E+05	4,0414E+00	9,1600E+05	1,8894E+00	9,2000E+05	3,1394E+001017	3	2	335
9,2500E+05	4,0384E+00	9,3600E+05	3,0364E+00	9,4200E+05	3,4354E+001017	3	2	336
9,4800E+05	2,1844E+00	9,5400E+05	3,3294E+00	9,6100E+05	2,1744E+001017	3	2	337
9,7000E+05	3,9164E+00	9,7500E+05	2,6624E+00	9,8000E+05	3,9084E+001017	3	2	338
9,8500E+05	2,7544E+00	9,9000E+05	2,6004E+00	9,9500E+05	2,1964E+001017	3	2	339
1,0000E+06	2,7923E+00	1,0020E+06	3,2414E+00	1,0090E+06	2,7894E+001017	3	2	340
1,0160E+06	3,4874E+00	1,0250E+06	2,0854E+00	1,0300E+06	2,0334E+001017	3	2	341
1,0350E+06	2,0824E+00	1,0410E+06	2,2804E+00	1,0500E+06	1,8774E+001017	3	2	342
1,0590E+06	2,7755E+00	1,0650E+06	2,2235E+00	1,0710E+06	2,5715E+001017	3	2	343
1,0770E+06	2,2705E+00	1,0900E+06	3,3665E+00	1,1000E+06	2,6635E+001017	3	2	344
1,1030E+06	2,3625E+00	1,1130E+06	4,0595E+00	1,1250E+06	2,9065E+001017	3	2	345
1,1310E+06	3,3545E+00	1,1400E+06	3,1525E+00	1,1480E+06	2,5505E+001017	3	2	346
1,1550E+06	3,9485E+00	1,1600E+06	2,5465E+00	1,1700E+06	2,5445E+001017	3	2	347
1,1760E+06	3,4425E+00	1,1820E+06	2,6405E+00	1,1950E+06	3,7375E+001017	3	2	348
1,2000E+06	3,3361E+00	1,2100E+06	2,6335E+00	1,3000E+06	2,7935E+001017	3	2	349
1,4000E+06	2,7820E+00	1,5000E+06	2,7736E+00	1,6000E+06	2,7697E+001017	3	2	350
1,6410E+06	2,7687E+00	1,7000E+06	2,7137E+00	1,8000E+06	2,6380E+001017	3	2	351
1,8490E+06	2,6367E+00	1,9000E+06	2,5847E+00	2,0000E+06	1,9892E+001017	3	2	352
2,0300E+06	2,3316E+00	2,0500E+06	2,3766E+00	2,0600E+06	2,4541E+001017	3	2	353
2,0800E+06	2,2091E+00	2,1000E+06	2,6143E+00	2,1200E+06	2,7093E+001017	3	2	354
2,1700E+06	2,4170E+00	2,2000E+06	2,5797E+00	2,2200E+06	2,4462E+001017	3	2	355
2,2700E+06	2,6575E+00	2,3100E+06	2,4407E+00	2,3600E+06	2,6221E+001017	3	2	356
2,4000E+06	2,6754E+00	2,4400E+06	2,9560E+00	2,4800E+06	2,7967E+001017	3	2	357
2,5200E+06	3,0474E+00	2,5500E+06	3,1206E+00	2,6000E+06	3,0191E+001017	3	2	358
2,6800E+06	2,7929E+00	2,7200E+06	2,7949E+00	2,8000E+06	2,8891E+001017	3	2	359
2,8400E+06	2,9011E+00	2,8800E+06	2,8431E+00	2,9200E+06	2,7551E+001017	3	2	360
2,9600E+06	2,7171E+00	3,0000E+06	2,7292E+00	3,0600E+06	2,7984E+001017	3	2	361
3,1200E+06	2,8679E+00	3,1500E+06	2,8826E+00	3,2400E+06	2,8071E+001017	3	2	362
3,2800E+06	2,8602E+00	3,3200E+06	2,8534E+00	3,4000E+06	2,7398E+001017	3	2	363
3,4600E+06	2,6897E+00	3,5000E+06	2,6630E+00	3,5600E+06	2,6545E+001017	3	2	364
3,7000E+06	2,6849E+00	3,7800E+06	2,6838E+00	3,8600E+06	2,6477E+001017	3	2	365
4,0000E+06	2,5638E+00	4,1000E+06	2,5629E+00	4,2000E+06	2,5920E+001017	3	2	366
4,2600E+06	2,5856E+00	4,4000E+06	2,5009E+00	4,5000E+06	2,4705E+001017	3	2	367
4,6000E+06	2,4661E+00	4,7000E+06	2,4818E+00	4,7600E+06	2,4763E+001017	3	2	368
4,9000E+06	2,4235E+00	5,0000E+06	2,3746E+00	5,5000E+06	2,3250E+001017	3	2	369
6,0000E+06	2,2469E+00	6,5000E+06	2,1450E+00	7,0000E+06	2,0569E+001017	3	2	370
7,5000E+06	1,9750E+00	8,0000E+06	1,9035E+00	8,5000E+06	1,8280E+001017	3	2	371
9,0000E+06	1,7560E+00	9,5000E+06	1,6980E+00	1,0000E+07	1,6408E+001017	3	2	372

1.0500E+07	1.5950E+00	1.1000E+07	1.5407E+00	1.1500E+07	1.4850E+00	1017	3	2	373
1.2000E+07	1.4333E+00	1.2500E+07	1.3800E+00	1.3000E+07	1.3237E+00	1017	3	2	374
1.3500E+07	1.2690E+00	1.4000E+07	1.2214E+00	1.4500E+07	1.1760E+00	1017	3	2	375
1.5000E+07	1.1295E+00					1017	3	2	376
0.0	0.0	0	0	0		01017	3	0	377
23000.0	5.0504E+01	0	99	0		01017	3	4	378
0.0	0.0	0	0	2		551017	3	4	379
2	2	55	5			1017	3	4	380
3.2600E+05	0.0000E+00	3.3500E+05	7.0000E-02	3.4500E+05	1.1000E-01	1017	3	4	381
3.5500E+05	1.4000E-01	3.6500E+05	1.6500E-01	3.9000E+05	2.1500E-01	1017	3	4	382
4.0000E+05	2.2130E-01	5.0000E+05	2.5500E-01	5.0000E+05	2.8250E-01	1017	3	4	383
7.0000E+05	3.1100E-01	8.0000E+05	3.3560E-01	9.9500E+05	3.5500E-01	1017	3	4	384
9.4800E+05	3.6400E-01	1.0000E+06	4.0610E-01	1.1000E+06	4.3500E-01	1017	3	4	385
1.2000E+06	4.6240E-01	1.3000E+06	4.8500E-01	1.4000E+06	5.0910E-01	1017	3	4	386
1.5000E+06	5.2500E-01	1.6000E+06	5.4570E-01	1.6410E+06	5.5000E-01	1017	3	4	387
1.7000E+06	6.1000E-01	1.8000E+06	7.0230E-01	1.8490E+06	7.1000E-01	1017	3	4	388
1.9000E+06	7.6900E-01	2.0000E+06	8.3960E-01	2.2000E+06	8.8920E-01	1017	3	4	389
2.4000E+06	9.2360E-01	2.6000E+06	9.7000E-01	2.8000E+06	1.0100E+00	1017	3	4	390
3.0000E+06	1.0500E+00	3.5000E+06	1.1350E+00	4.0000E+06	1.2030E+00	1017	3	4	391
4.5000E+06	1.2550E+00	5.0000E+06	1.2994E+00	5.5000E+06	1.3074E+00	1017	3	4	392
6.0000E+06	1.3037E+00	6.5000E+06	1.2937E+00	7.0000E+06	1.2800E+00	1017	3	4	393
7.5000E+06	1.2597E+00	8.0000E+06	1.2390E+00	8.5000E+06	1.2120E+00	1017	3	4	394
9.0000E+06	1.1865E+00	9.5000E+06	1.1568E+00	1.0000E+07	1.1314E+00	1017	3	4	395
1.0500E+07	1.1041E+00	1.1000E+07	1.0854E+00	1.1500E+07	9.9790E-01	1017	3	4	396
1.2000E+07	8.9600E-01	1.2500E+07	7.7520E-01	1.3000E+07	6.3210E-01	1017	3	4	397
1.3500E+07	5.0170E-01	1.4000E+07	4.0150E-01	1.4500E+07	3.1850E-01	1017	3	4	398
1.5000E+07	2.4710E-01					1017	3	4	399
0.0	0.0	0	0	0		01017	3	0	400
23000.0	5.0504E+01	0	0	0		01017	3	16	401
0.0	-1.1040E+07	0	0	2		91017	3	16	402
2	2	9	5			1017	3	16	403
1.1040E+07	0.0000E+00	1.1500E+07	7.0000E-02	1.2000E+07	1.6000E-01	1017	3	16	404
1.2500E+07	2.7000E-01	1.3000E+07	4.1000E-01	1.3500E+07	5.3800E-01	1017	3	16	405
1.4000E+07	6.4000E-01	1.4500E+07	7.2500E-01	1.5000E+07	8.0000E-01	1017	3	16	406
0.0	0.0	0	0	0		01017	3	0	407
23000.0	5.0504E+01	0	0	0		01017	3	102	408
0.0	7.3040E+06	0	0	1		1371017	3	102	409
137	5					1017	3	102	410
1.0000E-03	2.5451E+01	1.5000E+00	6.5720E-01	1.0000E+01	2.5500E-01	1017	3	102	411
4.0000E+01	1.2830E-01	1.0000E+02	8.3400E-02	1.2000E+02	7.8500E-02	1017	3	102	412
1.3000E+02	7.8000E-02	1.4000E+02	8.0900E-02	1.5000E+02	9.5600E-02	1017	3	102	413
1.5500E+02	1.2220E-01	1.6000E+02	2.2240E-01	1.6300E+02	4.9270E-01	1017	3	102	414
1.6500E+02	1.2240E+00	1.6600E+02	2.0922E+00	1.6700E+02	2.7556E+00	1017	3	102	415
1.6800E+02	2.0648E+00	1.6900E+02	1.1998E+00	1.7100E+02	4.7850E-01	1017	3	102	416
1.7300E+02	2.6370E-01	1.8000E+02	1.0590E-01	1.9000E+02	7.3600E-02	1017	3	102	417
2.0000E+02	6.4800E-02	2.2000E+02	5.8000E-02	2.5000E+02	5.3300E-02	1017	3	102	418
3.0000E+02	4.8400E-02	4.0000E+02	4.2300E-02	5.0000E+02	3.5900E-02	1017	3	102	419
8.0000E+02	3.1900E-02	1.0000E+03	2.9700E-02	1.2000E+03	2.8800E-02	1017	3	102	420
1.3000E+03	2.9700E-02	1.3500E+03	3.2100E-02	1.4000E+03	3.8800E-02	1017	3	102	421
1.4200E+03	4.0300E-02	1.4300E+03	3.9700E-02	1.4600E+03	3.5000E-02	1017	3	102	422
1.5000E+03	3.0700E-02	1.6000E+03	2.7900E-02	1.7000E+03	2.7400E-02	1017	3	102	423
1.9000E+03	2.7500E-02	2.2000E+03	2.9000E-02	2.5000E+03	3.2000E-02	1017	3	102	424
2.8000E+03	3.7900E-02	3.1000E+03	4.9300E-02	3.4000E+03	7.5100E-02	1017	3	102	425
3.6000E+03	1.1370E-01	3.8000E+03	2.0160E-01	4.0000E+03	4.0310E-01	1017	3	102	426
4.1000E+03	5.1530E-01	4.1600E+03	5.3380E-01	4.3200E+03	3.7470E-01	1017	3	102	427
4.4000E+03	2.7930E-01	4.6000E+03	1.4120E-01	4.8000E+03	8.6400E-02	1017	3	102	428
5.0000E+03	6.2600E-02	5.2000E+03	5.1900E-02	5.4000E+03	4.7600E-02	1017	3	102	429
5.6000E+03	4.7600E-02	5.8000E+03	5.1300E-02	6.0000E+03	5.8800E-02	1017	3	102	430
6.2000E+03	7.0900E-02	6.5000E+03	9.6800E-02	6.8400E+03	1.1210E-01	1017	3	102	431
7.0000E+03	1.0300E-01	7.2000E+03	8.3500E-02	7.5000E+03	5.7000E-02	1017	3	102	432
8.0000E+03	3.4200E-02	8.2000E+03	2.9700E-02	9.6000E+03	2.4500E-02	1017	3	102	433
9.0000E+03	2.2000E-02	9.5000E+03	2.0800E-02	1.0000E+04	2.0700E-02	1017	3	102	434

1.0600E+04	2.1000E-02	1.0900E+04	2.1100E-02	1.1700E+04	2.0200E-02	1017	3102	435
1.2200E+04	1.8800E-02	1.2500E+04	1.7800E-02	1.3200E+04	1.5300E-02	1017	3102	436
1.4000E+04	1.3300E-02	1.5200E+04	1.5500E-02	1.5600E+04	2.4700E-02	1017	3102	437
1.5900E+04	5.9000E-02	1.6000E+04	9.4100E-02	1.6100E+04	1.5620E-01	1017	3102	438
1.6200E+04	2.0270E-01	1.6300E+04	1.5490E-01	1.6500E+04	6.1600E-02	1017	3102	439
1.6700E+04	4.3800E-02	1.6800E+04	5.6700E-02	1.6900E+04	1.3900E-01	1017	3102	440
1.7000E+04	7.2110E-01	1.7100E+04	1.3370E-01	1.7300E+04	2.7000E-02	1017	3102	441
1.7600E+04	1.3300E-02	1.7900E+04	1.0100E-02	1.8300E+04	8.4000E-03	1017	3102	442
1.9200E+04	7.3000E-03	2.0000E+04	7.7000E-03	2.0500E+04	9.0000E-03	1017	3102	443
2.1000E+04	1.2600E-02	2.1200E+04	1.5700E-02	2.1400E+04	2.0800E-02	1017	3102	444
2.1700E+04	3.4100E-02	2.1900E+04	4.3400E-02	2.2000E+04	4.4800E-02	1017	3102	445
2.2200E+04	3.8400E-02	2.2500E+04	2.3300E-02	2.5000E+04	1.7000E-02	1017	3102	446
2.7000E+04	1.5200E-02	3.0000E+04	1.3300E-02	3.5000E+04	1.1100E-02	1017	3102	447
4.4100E+04	8.8000E-03	5.0100E+04	8.0000E-03	6.0000E+04	7.2000E-03	1017	3102	448
8.0500E+04	6.4000E-03	9.9500E+04	6.2000E-03	1.3000E+05	6.0000E-03	1017	3102	449
1.6000E+05	5.7000E-03	1.9950E+05	5.2000E-03	2.5000E+05	4.5000E-03	1017	3102	450
3.0000E+05	3.9000E-03	3.4500E+05	3.4500E-03	4.0000E+05	2.9500E-03	1017	3102	451
4.5000E+05	2.5500E-03	5.0000E+05	2.1000E-03	5.5000E+05	1.8500E-03	1017	3102	452
6.0000E+05	1.7000E-03	6.5100E+05	1.6500E-03	7.0000E+05	1.6300E-03	1017	3102	453
8.0000E+05	1.6200E-03	9.0000E+05	1.6000E-03	1.0000E+06	1.5700E-03	1017	3102	454
1.2000E+06	1.5000E-03	1.5000E+06	1.3800E-03	2.0000E+06	1.2000E-03	1017	3102	455
1.0000E+07	2.4000E-04	1.5000E+07	1.6000E-04			1017	3102	456
0.0	0.0	0	0	0		01017	3	0
23000.0	5.0504E+01	0	0	0		01017	3103	458
0.0	-1.6830E+06	0	0	2		251017	3103	459
2	2	25	5			1017	3103	460
3.0000E+06	0.0000E+00	3.5000E+06	1.3000E-03	4.0000E+06	2.6000E-03	1017	3103	461
4.5000E+06	4.0000E-03	5.0000E+06	5.5000E-03	5.5000E+06	7.2000E-03	1017	3103	462
6.0000E+06	9.0000E-03	6.5000E+06	1.0900E-02	7.0000E+06	1.2800E-02	1017	3103	463
7.5000E+06	1.4800E-02	8.0000E+06	1.6800E-02	8.5000E+06	1.8800E-02	1017	3103	464
9.0000E+06	2.0800E-02	9.5000E+06	2.2900E-02	1.0000E+07	2.4900E-02	1017	3103	465
1.0500E+07	2.7000E-02	1.1000E+07	2.8700E-02	1.1500E+07	3.0500E-02	1017	3103	466
1.2000E+07	3.2100E-02	1.2500E+07	3.3400E-02	1.3000E+07	3.4700E-02	1017	3103	467
1.3500E+07	3.5600E-02	1.4000E+07	3.6000E-02	1.4500E+07	3.6300E-02	1017	3103	468
1.5000E+07	3.6200E-02					1017	3103	469
0.0	0.0	0	0	0		01017	3	0
23000.0	5.0504E+01	0	0	0		01017	3107	471
0.0	-2.0420E+06	0	0	2		171017	3107	472
2	2	17	5			1017	3107	473
7.0000E+06	0.0000E+00	7.5000E+06	2.0000E-04	8.0000E+06	4.0000E-04	1017	3107	474
8.5000E+06	9.0000E-04	9.0000E+06	1.4000E-03	9.5000E+06	2.0000E-03	1017	3107	475
1.0000E+07	2.7000E-03	1.0500E+07	3.7000E-03	1.1000E+07	5.0000E-03	1017	3107	476
1.1500E+07	6.4000E-03	1.2000E+07	8.4000E-03	1.2500E+07	1.1200E-02	1017	3107	477
1.3000E+07	1.4300E-02	1.3500E+07	1.7500E-02	1.4000E+07	2.0900E-02	1017	3107	478
1.4500E+07	2.4000E-02	1.5000E+07	2.7000E-02			1017	3107	479
0.0	0.0	0	0	0		01017	3	0
23000.0	5.0504E+01	0	0	0		01017	3251	481
0.0	0.0	0	0	1		421017	3251	482
42	3					1017	3251	483
1.0000E-03	1.3200E-02	3.0000E+04	1.3200E-02	5.4000E+04	1.5200E-02	1017	3251	484
1.5800E+05	2.9210E-02	2.4800E+05	5.7190E-02	3.3200E+05	7.3094E-02	1017	3251	485
4.0800E+05	1.0277E-01	4.9600E+05	1.6340E-01	5.8000E+05	1.4406E-01	1017	3251	486
6.6200E+05	1.1887E-01	7.3400E+05	1.8076E-01	8.1800E+05	1.2726E-01	1017	3251	487
8.9400E+05	1.4024E-01	9.8200E+05	1.9979E-01	1.0560E+06	1.6163E-01	1017	3251	488
1.1360E+06	1.6856E-01	1.2200E+06	1.9236E-01	1.3020E+06	1.7819E-01	1017	3251	489
1.3800E+06	2.1898E-01	1.4620E+06	2.2481E-01	1.5420E+06	2.4603E-01	1017	3251	490
1.6280E+06	2.3875E-01	1.7020E+06	2.8865E-01	1.7820E+06	2.7967E-01	1017	3251	491
2.0000E+06	3.6568E-01	2.2000E+06	4.0476E-01	2.4000E+06	4.3975E-01	1017	3251	492
2.6000E+06	4.7232E-01	2.8000E+06	5.0364E-01	3.0000E+06	5.3280E-01	1017	3251	493
4.0000E+06	6.4088E-01	5.0000E+06	7.0903E-01	5.0000E+06	7.4696E-01	1017	3251	494
7.0000E+06	7.7494E-01	8.0000E+06	7.9195E-01	9.0000E+06	7.9931E-01	1017	3251	495
1.0000E+07	7.9900E-01	1.1000E+07	7.9310E-01	1.2000E+07	7.8320E-01	1017	3251	496

1.3000E+07	7.7106E-01	1.4000E+07	7.5824E-01	1.5000E+07	7.4620E-01	1017	3251	497
0.0	0.0	0	0	0	0	01017	3	0
23000.0	5.0504E+01	0	0	0	0	01017	3252	499
0.0	0.0	0	0	1	1	421017	3252	500
42	3					1017	3252	501
1.0000E-03	3.9083E-02	3.0000E+04	3.9083E-02	6.4000E+04	3.9004E-02	1017	3252	502
1.5800E+05	3.8449E-02	2.4800E+05	3.7341E-02	3.3200E+05	3.6711E-02	1017	3252	503
4.0800E+05	3.5536E-02	4.9600E+05	3.3135E-02	5.8000E+05	3.3902E-02	1017	3252	504
6.6200E+05	3.4900E-02	7.3400E+05	3.2449E-02	8.1800E+05	3.4569E-02	1017	3252	505
8.9400E+05	3.4055E-02	9.8200E+05	3.1697E-02	1.0560E+06	3.3209E-02	1017	3252	506
1.1360E+06	3.2935E-02	1.2200E+06	3.1993E-02	1.3020E+06	3.2555E-02	1017	3252	507
1.3800E+06	3.0940E-02	1.4620E+06	3.0710E-02	1.5420E+06	2.9870E-02	1017	3252	508
1.6280E+06	3.0159E-02	1.7020E+06	2.8183E-02	1.7820E+06	2.8540E-02	1017	3252	509
2.0000E+06	2.5134E-02	2.2000E+06	2.3588E-02	2.4000E+06	2.2204E-02	1017	3252	510
2.6000E+06	2.0915E-02	2.8000E+06	1.9676E-02	3.0000E+06	1.8522E-02	1017	3252	511
4.0000E+06	1.4252E-02	5.0000E+06	1.1566E-02	6.0000E+06	1.0079E-02	1017	3252	512
7.0000E+06	8.9861E-03	8.0000E+06	8.3271E-03	9.0000E+06	8.0492E-03	1017	3252	513
1.0000E+07	8.0747E-03	1.1000E+07	8.3234E-03	1.2000E+07	8.7367E-03	1017	3252	514
1.3000E+07	9.2449E-03	1.4000E+07	9.7873E-03	1.5000E+07	1.0305E-02	1017	3252	515
0.0	0.0	0	0	0	0	01017	3	0
23000.0	5.0504E+01	0	0	0	0	01017	3253	517
0.0	0.0	0	0	1	1	421017	3253	518
42	3					1017	3253	519
1.0000E-03	2.6229E-02	3.0000E+04	2.6229E-02	6.4000E+04	2.6202E-02	1017	3253	520
1.5800E+05	2.6000E-02	2.4800E+05	2.5619E-02	3.3200E+05	2.5484E-02	1017	3253	521
4.0800E+05	2.5381E-02	4.9600E+05	2.4798E-02	5.8000E+05	2.5527E-02	1017	3253	522
6.6200E+05	2.6145E-02	7.3400E+05	2.5264E-02	8.1800E+05	2.6714E-02	1017	3253	523
8.9400E+05	2.6554E-02	9.8200E+05	2.6149E-02	1.0560E+06	2.6951E-02	1017	3253	524
1.1360E+06	2.6942E-02	1.2200E+06	2.6821E-02	1.3020E+06	2.7259E-02	1017	3253	525
1.3800E+06	2.6899E-02	1.4620E+06	2.7024E-02	1.5420E+06	2.6396E-02	1017	3253	526
1.6280E+06	2.6897E-02	1.7020E+06	2.6173E-02	1.7820E+06	2.6332E-02	1017	3253	527
2.0000E+06	2.5727E-02	2.2000E+06	2.5202E-02	2.4000E+06	2.4634E-02	1017	3253	528
2.6000E+06	2.3873E-02	2.8000E+06	2.3265E-02	3.0000E+06	2.2649E-02	1017	3253	529
4.0000E+06	2.0013E-02	5.0000E+06	1.8438E-02	6.0000E+06	1.7901E-02	1017	3253	530
7.0000E+06	1.7414E-02	8.0000E+06	1.7091E-02	9.0000E+06	1.7061E-02	1017	3253	531
1.0000E+07	1.7371E-02	1.1000E+07	1.7985E-02	1.2000E+07	1.8832E-02	1017	3253	532
1.3000E+07	1.9737E-02	1.4000E+07	2.0549E-02	1.5000E+07	2.1147E-02	1017	3253	533
0.0	0.0	0	0	0	0	01017	3	0
0.0	0.0	0	0	0	0	01017	0	0
23000.0	5.0504E+01	1	1	0	0	01017	4	2
0.0	5.0504E+01	0	2	169	169	121017	4	2
1.0000E+00	1.3200E-02	8.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	1017	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1017	4	2
0.0000E+00	0.0000E+00	9.9976E-01	2.3760E-02	2.7000E-04	0.0000E+00	1017	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1017	4	2
0.0000E+00	0.0000E+00	0.0000E+00	1.3200E-02	9.9938E-01	3.3930E-02	1017	4	2
5.6000E-04	1.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1017	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	2.4000E-04	2.3750E-02	1017	4	2
9.9880E-01	4.3970E-02	9.5000E-04	1.0000E-05	0.0000E+00	0.0000E+00	1017	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1017	4	2
5.4000E-04	3.3910E-02	9.9802E-01	5.3950E-02	1.4400E-03	2.0000E-05	1017	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1017	4	2
0.0000E+00	1.0000E-05	9.3000E-04	4.3940E-02	9.9704E-01	6.3880E-02	1017	4	2
2.0200E-03	4.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1017	4	2
0.0000E+00	0.0000E+00	0.0000E+00	2.0000E-05	1.4200E-03	5.3890E-02	1017	4	2
9.9586E-01	7.3770E-02	2.7100E-03	6.0000E-05	0.0000E+00	0.0000E+00	1017	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	4.0000E-05	1017	4	2
2.0100E-03	6.3790E-02	9.9449E-01	8.3630E-02	3.4900E-03	1.0000E-04	1017	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1017	4	2
0.0000E+00	6.0000E-05	2.7000E-03	7.3660E-02	9.9293E-01	9.3460E-02	1017	4	2
4.3700E-03	1.3000E-04	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1017	4	2
0.0000E+00	0.0000E+00	0.0000E+00	9.0000E-05	3.4800E-03	8.3490E-02	1017	4	2

9.9117E-01	1.0326E-01	5.3400E-03	1.8000E-04	0.0000E+00	0.0000E+00	01017	4	2	559
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	-1.3000E-04	01017	4	2	560
4.3500E-03	-9.3290E-02	9.8922E-01	1.1302E-01	5.4100E-03	0.0000E+00	01017	4	2	561
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01017	4	2	562
0.0000E+00	-1.8000E-04	5.3300E-03	-1.0305E-01	9.8708E-01	1.2276E-01	01017	4	2	563
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01017	4	2	564
0.0000E+00	0.0000E+00	1.0000E-05	-2.4000E-04	5.4000E-03	-1.1277E-01	01017	4	2	565
9.8474E-01						1017	4	2	566
0.0	0.0	0	0	1		421017	4	2	567
42	3					1017	4	2	568
0.0	1.0000E-03	0	0	1		01017	4	2	569
0.0000E+00						1017	4	2	570
0.0	3.0000E+04	0	0	1		01017	4	2	571
0.0000E+00						1017	4	2	572
0.0	6.4000E+04	0	0	1		01017	4	2	573
2.0000E-03						1017	4	2	574
0.0	1.5800E+05	0	0	2		01017	4	2	575
1.6000E-02	-1.0000E-03					1017	4	2	576
0.0	2.4800E+05	0	0	2		01017	4	2	577
4.4000E-02	0.0000E+00					1017	4	2	578
0.0	3.3200E+05	0	0	2		01017	4	2	579
6.0000E-02	7.0000E-03					1017	4	2	580
0.0	4.0800E+05	0	0	3		01017	4	2	581
9.0000E-02	3.1000E-02	-1.0000E-03				1017	4	2	582
0.0	4.9600E+05	0	0	3		01017	4	2	583
1.5100E-01	5.8000E-02	0.0000E+00				1017	4	2	584
0.0	5.8000E+05	0	0	3		01017	4	2	585
1.3200E-01	8.4000E-02	0.0000E+00				1017	4	2	586
0.0	6.6200E+05	0	0	3		01017	4	2	587
1.0700E-01	9.9000E-02	0.0000E+00				1017	4	2	588
0.0	7.3400E+05	0	0	4		01017	4	2	589
1.6900E-01	1.0600E-01	1.0000E-03	1.0000E-03			1017	4	2	590
0.0	8.1800E+05	0	0	4		01017	4	2	591
1.1600E-01	1.4500E-01	1.0000E-03	2.0000E-03			1017	4	2	592
0.0	8.9400E+05	0	0	4		01017	4	2	593
1.2900E-01	1.4700E-01	4.0000E-03	3.0000E-03			1017	4	2	594
0.0	9.8200E+05	0	0	4		01017	4	2	595
1.8900E-01	1.8000E-01	6.0000E-03	5.0000E-03			1017	4	2	596
0.0	1.0560E+06	0	0	4		01017	4	2	597
1.5100E-01	1.9300E-01	9.0000E-03	8.0000E-03			1017	4	2	598
0.0	1.1360E+06	0	0	4		01017	4	2	599
1.5800E-01	1.9900E-01	1.3000E-02	1.0000E-02			1017	4	2	600
0.0	1.2200E+06	0	0	4		01017	4	2	601
1.8200E-01	2.1400E-01	1.8000E-02	1.3000E-02			1017	4	2	602
0.0	1.3020E+06	0	0	4		01017	4	2	603
1.6800E-01	2.2800E-01	2.4000E-02	1.6000E-02			1017	4	2	604
0.0	1.3800E+06	0	0	4		01017	4	2	605
2.0900E-01	2.4400E-01	3.0000E-02	1.9000E-02			1017	4	2	606
0.0	1.4620E+06	0	0	4		01017	4	2	607
2.1500E-01	2.5700E-01	3.7000E-02	2.3000E-02			1017	4	2	608
0.0	1.5420E+06	0	0	4		01017	4	2	609
2.3600E-01	2.4100E-01	4.5000E-02	2.7000E-02			1017	4	2	610
0.0	1.6280E+06	0	0	4		01017	4	2	611
2.2900E-01	2.6300E-01	5.3000E-02	3.1000E-02			1017	4	2	612
0.0	1.7020E+06	0	0	4		01017	4	2	613
2.7900E-01	2.7100E-01	6.2000E-02	3.5000E-02			1017	4	2	614
0.0	1.7820E+06	0	0	4		01017	4	2	615
2.7000E-01	2.7100E-01	7.3000E-02	4.1000E-02			1017	4	2	616
0.0	2.0000E+06	0	0	5		01017	4	2	617
3.5667E-01	3.2829E-01	1.5276E-01	4.2610E-02	1.4500E-03		1017	4	2	618
0.0	2.2000E+06	0	0	6		01017	4	2	619
3.9595E-01	3.4530E-01	1.7732E-01	5.1010E-02	2.1600E-03	6.0000E-04	01017	4	2	620

0.0	2.4000E+06	0	0	6	01017	4	2	621
4.3109E-01	3.5903E-01	1.9955E-01	5.9260E-02	3.1000E-03	8.9000E-04	01017	4	2 622
0.0	2.6000E+06	0	0	6	01017	4	2	623
4.6371E-01	3.6520E-01	2.2016E-01	6.6930E-02	4.3800E-03	1.2000E-03	01017	4	2 624
0.0	2.9000E+06	0	0	6	01017	4	2	625
4.9519E-01	3.7937E-01	2.3986E-01	7.5860E-02	5.0600E-03	1.7200E-03	01017	4	2 626
0.0	3.0000E+06	0	0	7	01017	4	2	627
5.2450E-01	3.9334E-01	2.5824E-01	8.5130E-02	9.2500E-03	2.3900E-03	01017	4	2 628
3.0000E-04						1017	4	2 629
0.0	4.0000E+06	0	0	7	01017	4	2	630
6.3325E-01	4.5920E-01	3.2992E-01	1.3618E-01	2.8270E-02	9.3700E-03	01017	4	2 631
1.6600E-03						1017	4	2 632
0.0	5.0000E+06	0	0	8	01017	4	2	633
7.0199E-01	5.2473E-01	3.8250E-01	1.9416E-01	5.2640E-02	2.3790E-02	01017	4	2 634
5.2300E-03	8.1000E-04					1017	4	2 635
0.0	6.0000E+06	0	0	9	01017	4	2	636
7.4024E-01	5.7461E-01	4.1862E-01	2.4659E-01	9.9680E-02	4.2070E-02	01017	4	2 637
1.1240E-02	2.3600E-03	5.7000E-04				1017	4	2 638
0.0	7.0000E+06	0	0	9	01017	4	2	639
7.6837E-01	6.1175E-01	4.4787E-01	2.9043E-01	1.3260E-01	6.0400E-02	01017	4	2 640
1.9790E-02	5.3100E-03	1.4400E-03				1017	4	2 641
0.0	8.0000E+06	0	0	10	01017	4	2	642
7.8532E-01	6.3479E-01	4.7126E-01	3.2397E-01	1.6100E-01	7.7040E-02	01017	4	2 643
3.0330E-02	9.9800E-03	3.2000E-03	3.6000E-04			1017	4	2 644
0.0	9.0000E+06	0	0	10	01017	4	2	645
7.9246E-01	6.4659E-01	4.8861E-01	3.4747E-01	1.8521E-01	9.0920E-02	01017	4	2 646
4.1070E-02	1.6180E-02	6.0100E-03	5.9000E-04			1017	4	2 647
0.0	1.0000E+07	0	0	10	01017	4	2	648
7.9183E-01	6.5061E-01	5.0021E-01	3.6356E-01	2.0591E-01	1.0313E-01	01017	4	2 649
5.1490E-02	2.4060E-02	9.9000E-03	8.6000E-04			1017	4	2 650
0.0	1.1000E+07	0	0	11	01017	4	2	651
7.8548E-01	6.5019E-01	5.0817E-01	3.7642E-01	2.2522E-01	1.1637E-01	01017	4	2 652
6.2940E-02	3.4220E-02	1.5280E-02	1.3500E-03	5.7000E-04		1017	4	2 653
0.0	1.2000E+07	0	0	12	01017	4	2	654
7.7501E-01	6.4768E-01	5.1413E-01	3.8937E-01	2.4490E-01	1.3307E-01	01017	4	2 655
7.6580E-02	4.7460E-02	2.2530E-02	2.6300E-03	1.4800E-03	4.3000E-04	01017	4	2 656
0.0	1.3000E+07	0	0	12	01017	4	2	657
7.6213E-01	6.4397E-01	5.1870E-01	4.0346E-01	2.6559E-01	1.5393E-01	01017	4	2 658
9.2930E-02	6.3740E-02	3.2450E-02	5.2600E-03	3.0800E-03	8.8000E-04	01017	4	2 659
0.0	1.4000E+07	0	0	12	01017	4	2	660
7.4838E-01	6.3902E-01	5.2124E-01	4.1776E-01	2.8633E-01	1.7808E-01	01017	4	2 661
1.1138E-01	8.2250E-02	4.5440E-02	1.0150E-02	5.8700E-03	1.6300E-03	01017	4	2 662
0.0	1.5000E+07	0	0	12	01017	4	2	663
7.3524E-01	6.3233E-01	5.2054E-01	4.2975E-01	3.0511E-01	2.0293E-01	01017	4	2 664
1.3050E-01	1.0122E-01	6.1240E-02	1.8020E-02	1.0130E-02	2.7300E-03	01017	4	2 665
0.0	0.0	0	0	0	01017	4	0	666
0.0	0.0	0	0	0	01017	0	0	667
23000.0	5.0504E+01	0	0	5	01017	5	4	668
0.0	3.2600E+05	0	3	1	181017	5	4	669
18	3				1017	5	4	670
3.2600E+05	1.0000E+00	9.4800E+05	1.0000E+00	1.0000E+06	9.1820E-01	01017	5	4 671
1.1000E+06	8.9660E-01	1.2000E+06	8.7820E-01	1.3000E+06	8.5980E-01	01017	5	4 672
1.4000E+06	8.4340E-01	1.5000E+06	8.2860E-01	1.6000E+06	8.0920E-01	01017	5	4 673
1.6410E+06	8.0000E-01	1.7000E+06	7.1800E-01	1.8000E+06	6.1210E-01	01017	5	4 674
1.8490E+06	5.9860E-01	1.9000E+06	5.3970E-01	2.0000E+06	4.7500E-01	01017	5	4 675
2.2000E+06	4.2920E-01	2.4000E+06	3.9420E-01	2.6000E+06	0.0000E+00	01017	5	4 676
0.0	9.4800E+05	0	3	1	171017	5	4	677
17	3				1017	5	4	678
9.4800E+05	0.0000E+00	1.0000E+06	8.1800E-02	1.1000E+06	1.0340E-01	01017	5	4 679
1.2000E+06	1.2180E-01	1.3000E+06	1.4020E-01	1.4000E+06	1.5660E-01	01017	5	4 680
1.5000E+06	1.7140E-01	1.6000E+06	1.9080E-01	1.6410E+06	2.0000E-01	01017	5	4 681
1.7000E+06	1.8850E-01	1.8000E+06	1.7940E-01	1.8490E+06	1.8310E-01	01017	5	4 682

1,9000E+06	1.7040E-01	2.0000E+06	1,6470E+01	2,2000E+06	1,6680E+01	11017	5	4	683
2,4000E+06	1,6700E+01	2,6000E+06	0,0000E+00			1017	5	4	684
0,0	1,6410E+06	0	3	1		91017	5	4	685
9	3					1017	5	4	686
1,6410E+06	0,0000E+00	1,7000E+06	9,3500E+02	1,8000E+06	2,0850E+01	11017	5	4	687
1,8490E+06	2,1830E-01	1,9000E+06	2,0540E-01	2,0000E+06	2,0000E+01	11017	5	4	688
2,2000E+06	2,1550E-01	2,4000E+06	2,3010E-01	2,6000E+06	0,0000E+00	11017	5	4	689
0,0	1,8490E+06	0	3	1		61017	5	4	690
6	3					1017	5	4	691
1,8490E+06	0,0000E+00	1,9000E+06	8,4500E+02	2,0000E+06	1,6030E+01	11017	5	4	692
2,2000E+06	1,8850E-01	2,4000E+06	2,0870E-01	2,6000E+06	0,0000E+00	11017	5	4	693
0,0	0,0	0	9	1		31017	5	4	694
3	3					1017	5	4	695
2,4000E+06	0,0000E+00	2,6000E+06	1,0000E+00	1,5000E+07	1,0000E+00	11017	5	4	696
0,0	0,0	0	0	1		21017	5	4	697
2	5					1017	5	4	698
2,4000E+06	7,0000E+05	1,5000E+07	1,7510E+06			1017	5	4	699
0,0	0,0	0	0	0		01017	5	0	700
23000,0	5,0504E+01	0	0	1		01017	5	16	701
0,0	0,0	0	9	1		21017	5	16	702
2	2					1017	5	16	703
1,1040E+07	1,0000E+00	1,5000E+07	1,0000E+00			1017	5	16	704
0,0	0,0	0	0	1		21017	5	16	705
2	2					1017	5	16	706
1,1040E+07	1,0000E+05	1,5000E+07	1,3860E+06			1017	5	16	707
0,0	0,0	0	0	0		01017	5	0	708
0,0	0,0	0	0	0		01017	0	0	709
23000,0	5,0504E+01	0	0	0		01017	7	4	710
0,0	0,0	0	0	12		11017	7	4	711
0,0000E+00	5,9300E+01	5,0504E+01	1,5000E+00	0,0		0,01017	7	4	712
1,0000E+00	5,0000E+00	5,0504E+01	0,0	0,0		0,01017	7	4	713
0,0	0,0	0	0	0		01017	7	0	714
0,0	0,0	0	0	0		01017	0	0	715
0,0	0,0	0	0	0		0	0	0	716

APPENDIX D
ENDF/B Listing for Molybdenum

42000.0	9.5066E+01	1	0	0	01025	1451	1	
0.0	0.0	0	0	28	01025	1451	2	
MOLYBDENUM CROSS SECTIONS MATERIAL 1025					1025	1451	3	
THE PRIMARY SOURCE FOR THIS EVALUATION IS KFK-120 BY J.J.SCHMIDT,					1025	1451	4	
THIS DATA WAS PREPARED BY E.PENNINGTON,A.N.L.,IN OCTOBER 1966.					1025	1451	5	
THE FOLLOWING MODIFICATIONS WERE MADE OF THE DATA FROM THE PRIMARY					1025	1451	6	
SOURCE=					1025	1451	7	
RESONANCE PARAMETERS FROM JETP 17,803,(1963),PLUS SOME SMOOTH					1025	1451	8	
CAPTURE WERE USED FROM 4 EV. TO 1 KEV,					1025	1451	9	
INELASTIC SCATTERING CROSS SECTIONS FROM 200 KEV, TO 1.5 MEV, FOR					1025	1451	10	
FOUR RESOLVED LEVELS WERE OBTAINED FROM A.B.SMITH AND R.HAYES (TO					1025	1451	11	
BE PUBLISHED).					1025	1451	12	
N=2N AND N=3N CROSS SECTIONS WERE OBTAINED FROM S.PEARLSTEIN, SEE					1025	1451	13	
N.S.E.23,238-250(1965).					1025	1451	14	
THE TOTAL CROSS SECTION WAS EXTENDED FROM 10 TO 15 MEV, USING					1025	1451	15	
BNL-325 DATA.					1025	1451	16	
THE N-GAMMA CROSS SECTION WAS EXTENDED FROM 10 TO 15 MEV, USING					1025	1451	17	
1/E BEHAVIOR.					1025	1451	18	
THE REACTION CROSS SECTION WAS ASSUMED CONSTANT FROM 10 TO 15 MEV					1025	1451	19	
THE INELASTIC SCATTERING CROSS SECTION WAS OBTAINED ABOVE THE					1025	1451	20	
N=2N THRESHOLD BY SUBTRACTING OTHER REACTIONS FROM THE REACTION					1025	1451	21	
CROSS SECTION.					1025	1451	22	
NUCLEAR TEMPERATURES WERE ESTIMATED FOR CONTINUUM INELASTIC					1025	1451	23	
SCATTERING AS IN YIFTAH-OKRENT-MOLDAUER.					1025	1451	24	
LEGENDRE COEFFICIENTS FOR ELASTIC SCATTERING WERE OBTAINED FROM					1025	1451	25	
H.ALTER UP TO 6 MEV.(SEE NAA-SR-11980 VOL,IV).ABOVE 6 MEV, ABACUS					1025	1451	26	
OPTICAL MODEL CALCULATIONS PROVIDED THE COEFFICIENTS.					1025	1451	27	
VALUES OF MU BAR LAB,XI,AND GAMMA WERE CALCULATED FROM THE					1025	1451	28	
LEGENDRE COEFFICIENTS.					1025	1451	29	
PARAMETERS FOR THE FREE GAS THERMAL SCATTERING LAW WERE INCLUDED,					1025	1451	30	
0.0	0.0	0	0	0	01025	1 0	31	
0.0	0.0	0	0	0	01025	0 0	32	
42000.0	9.5066E+01	0	0	6	01025	2151	33	
42092.0	1.5860E-01	0	0	1	01025	2151	34	
4.0000E+00	1.0000E+03	1	1	0	01025	2151	35	
0.0000E+00	6.6000E-01	0	0	1	01025	2151	36	
1.4487E-03	0.0000E+00	0	0	6	11025	2151	37	
3.4660E+02	5.0000E-01	2.8800E-01	2.8000E-02	2.6000E-01	0.0000E+00	01025	2151	38
42095.0	1.5700E-01	0	0	1	01025	2151	39	
4.0000E+00	1.0000E+03	1	1	0	01025	2151	40	
2.5000E+00	6.6000E-01	0	0	2	01025	2151	41	
1.4487E-03	0.0000E+00	0	0	36	61025	2151	42	
4.5000E+01	2.5000E+00	3.8500E-01	1.7500E-01	2.1000E-01	0.0000E+00	01025	2151	43
1.5900E+02	2.5000E+00	2.7360E-01	1.3600E-02	2.6000E-01	0.0000E+00	01025	2151	44
3.5820E+02	2.5000E+00	6.6000E-01	4.0000E-01	2.6000E-01	0.0000E+00	01025	2151	45
5.5470E+02	2.5000E+00	3.8000E-01	1.2000E-01	2.6000E-01	0.0000E+00	01025	2151	46
6.7930E+02	2.5000E+00	1.0600E+00	8.0000E-01	2.6000E-01	0.0000E+00	01025	2151	47
8.9600E+02	2.5000E+00	7.4000E-01	4.8000E-01	2.6000E-01	0.0000E+00	01025	2151	48
1.4487E-03	0.0000E+00	1	0	42	71025	2151	49	
1.1080E+02	2.5000E+00	2.6016E-01	1.6000E-04	2.6000E-01	0.0000E+00	01025	2151	50
1.1830E+02	2.5000E+00	2.6013E-01	1.2500E-04	2.6000E-01	0.0000E+00	01025	2151	51
2.2000E+02	2.5000E+00	2.6104E-01	1.0400E-03	2.6000E-01	0.0000E+00	01025	2151	52
2.4900E+02	2.5000E+00	2.6035E-01	3.5000E-04	2.6000E-01	0.0000E+00	01025	2151	53
2.6730E+02	2.5000E+00	2.6082E-01	8.2000E-04	2.6000E-01	0.0000E+00	01025	2151	54
3.3500E+02	2.5000E+00	2.6205E-01	2.0500E-03	2.6000E-01	0.0000E+00	01025	2151	55
4.8000E+02	2.5000E+00	2.6540E-01	5.4000E-03	2.6000E-01	0.0000E+00	01025	2151	56
42096.0	1.6500E-01	0	0	1	01025	2151	57	
4.0000E+00	1.0000E+03	1	1	0	01025	2151	58	
0.0000E+00	6.6000E-01	0	0	2	01025	2151	59	
1.4487E-03	0.0000E+00	0	0	6	11025	2151	60	
1.3110E+02	5.0000E-01	4.6000E-01	2.0000E-01	2.6000E-01	0.0000E+00	01025	2151	61
1.4487E-03	0.0000E+00	1	0	6	11025	2151	62	

1.1450E+02	1.0000E+00	2.6075E-01	7.5000E-04	2.6000E-01	0.0000E+00	01025	2151	63
42097.0	9.4500E-02	0	0	1	01025	2151	64	
4.0000E+00	1.0000E+03	1	1	0	01025	2151	65	
2.5000E+00	6.6000E-01	0	0	2	01025	2151	66	
1.4487E-03	0.0000E+00	0	0	36	61025	2151	67	
7.0900E+01	2.5000E+00	3.4750E-01	1.7500E-02	3.3000E-01	0.0000E+00	01025	2151	68
2.8540E+02	2.5000E+00	3.2400E-01	6.4000E-02	2.6000E-01	0.0000E+00	01025	2151	69
3.9670E+02	2.5000E+00	3.4000E-01	8.0000E-02	2.6000E-01	0.0000E+00	01025	2151	70
5.0500E+02	2.5000E+00	7.9000E-01	5.3000E-01	2.6000E-01	0.0000E+00	01025	2151	71
5.7600E+02	2.5000E+00	9.3000E-01	6.7000E-01	2.6000E-01	0.0000E+00	01025	2151	72
7.8800E+02	2.5000E+00	2.4100E+00	2.1500E+00	2.6000E-01	0.0000E+00	01025	2151	73
1.4487E-03	0.0000E+00	1	0	18	31025	2151	74	
2.1000E+02	2.5000E+00	2.6078E-01	7.8000E-04	2.6000E-01	0.0000E+00	01025	2151	75
2.3000E+02	2.5000E+00	2.6205E-01	2.0500E-03	2.6000E-01	0.0000E+00	01025	2151	76
3.1170E+02	2.5000E+00	2.6800E-01	8.0000E-03	2.6000E-01	0.0000E+00	01025	2151	77
42098.0	2.3750E-01	0	0	1	01025	2151	78	
4.0000E+00	1.0000E+03	1	1	0	01025	2151	79	
0.0000E+00	6.6000E-01	0	0	2	01025	2151	80	
1.4487E-03	0.0000E+00	0	0	24	41025	2151	81	
4.2970E+02	5.0000E-01	3.3000E-01	7.0000E-02	2.6000E-01	0.0000E+00	01025	2151	82
4.6700E+02	5.0000E-01	9.6000E-01	7.0000E-01	2.6000E-01	0.0000E+00	01025	2151	83
6.1200E+02	5.0000E-01	2.9500E-01	3.5000E-02	2.6000E-01	0.0000E+00	01025	2151	84
8.1600E+02	5.0000E-01	3.4000E-01	8.0000E-02	2.6000E-01	0.0000E+00	01025	2151	85
1.4487E-03	0.0000E+00	1	0	6	11025	2151	86	
1.2000E+01	1.0000E+00	2.0007E-01	7.0000E-05	2.0000E-01	0.0000E+00	01025	2151	87
42100.0	9.6200E-02	0	0	1	01025	2151	88	
4.0000E+00	1.0000E+03	1	1	0	01025	2151	89	
0.0000E+00	6.6000E-01	0	0	2	01025	2151	90	
1.4487E-03	0.0000E+00	0	0	6	11025	2151	91	
3.6300E+02	5.0000E-01	1.2600E+00	1.0000E+00	2.6000E-01	0.0000E+00	01025	2151	92
1.4487E-03	0.0000E+00	1	0	6	11025	2151	93	
9.9500E+01	1.0000E+00	2.6056E-01	5.6000E-04	2.6000E-01	0.0000E+00	01025	2151	94
0.0	0.0	0	0	0	01025	2	0	95
0.0	0.0	0	0	0	01025	0	0	96
42000.0	9.5066E+01	0	0	0	01025	3	1	97
0.0	0.0	0	0	1	1311025	3	1	98
131	5				1025	3	1	99
1.0000E-03	1.1220E+01	1.0000E-02	8.4460E+00	2.0000E-02	7.8860E+00	01025	3	100
2.5300E-02	7.7000E+00	4.0000E-02	7.4170E+00	5.0000E-02	7.1690E+00	01025	3	101
8.0000E-02	7.0070E+00	1.0000E-01	6.9000E+00	2.0000E-01	6.5880E+00	01025	3	102
4.0000E-01	6.3260E+00	6.0000E-01	6.1930E+00	9.0000E-01	6.1040E+00	01025	3	103
1.0000E+00	6.0400E+00	1.5000E+00	5.9340E+00	4.0000E+00	5.7380E+00	01025	3	104
4.0000E+00	6.1600E-01	2.0000E+01	5.0000E-01	9.0000E+01	4.0000E+01	01025	3	105
2.0000E+02	3.0000E-01	3.0000E+02	6.0000E-01	5.7500E+02	6.0000E+01	01025	3	106
6.8500E+02	2.5000E+00	7.4000E+02	2.5000E+00	7.7000E+02	2.3600E+00	01025	3	107
8.0000E+02	2.2300E+00	8.5000E+02	2.0300E+00	9.0000E+02	1.9300E+00	01025	3	108
9.5000E+02	1.8700E+00	1.0000E+03	1.8500E+00	1.0000E+03	7.6320E+00	01025	3	109
1.2700E+03	9.0000E+00	1.5000E+03	8.0000E+00	2.0000E+03	6.6500E+00	01025	3	110
2.5000E+03	6.6400E+00	3.0000E+03	6.6500E+00	4.0000E+03	6.6800E+00	01025	3	111
5.0000E+03	6.7000E+00	6.0000E+03	6.7300E+00	7.0000E+03	6.7600E+00	01025	3	112
8.0000E+03	6.7900E+00	9.0000E+03	6.8200E+00	1.0000E+04	6.8500E+00	01025	3	113
1.5000E+04	7.0300E+00	2.0000E+04	7.2600E+00	2.5000E+04	7.5000E+00	01025	3	114
3.0000E+04	7.6800E+00	3.5000E+04	7.8200E+00	4.0000E+04	7.9000E+00	01025	3	115
4.5000E+04	7.9300E+00	5.0000E+04	7.9500E+00	5.0000E+04	8.0000E+00	01025	3	116
7.0000E+04	8.0900E+00	8.0000E+04	8.3000E+00	9.0000E+04	8.5300E+00	01025	3	117
1.0000E+05	8.8000E+00	1.2000E+05	9.0000E+00	1.4000E+05	9.1000E+00	01025	3	118
1.6000E+05	9.1500E+00	1.8000E+05	9.1700E+00	2.0000E+05	9.1500E+00	01025	3	119
3.0000E+05	8.8700E+00	4.0000E+05	8.5100E+00	4.5000E+05	8.3400E+00	01025	3	120
5.0000E+05	8.1700E+00	5.5000E+05	8.0100E+00	5.0000E+05	7.8500E+00	01025	3	121
6.5000E+05	7.7000E+00	7.0000E+05	7.5500E+00	7.5000E+05	7.4100E+00	01025	3	122
7.9000E+05	7.3020E+00	8.2000E+05	7.2210E+00	9.5000E+05	7.1400E+00	01025	3	123
9.0000E+05	7.0200E+00	9.5000E+05	6.9000E+00	1.0000E+06	6.7800E+00	01025	3	124

1.0500E+06	6.6600E+00	1.1000E+06	6.5400E+00	1.1500E+06	6.4200E+00	1025	3	1	125
1.2000E+06	6.3000E+00	1.2500E+06	6.2170E+00	1.3000E+06	6.1350E+00	1025	3	1	126
1.3500E+06	6.0530E+00	1.4000E+06	5.9700E+00	1.4500E+06	5.8830E+00	1025	3	1	127
1.5000E+06	5.7950E+00	1.6000E+06	5.6200E+00	1.8000E+06	5.3200E+00	1025	3	1	128
2.0000E+06	5.0700E+00	2.2000E+06	4.8300E+00	2.4000E+06	4.6200E+00	1025	3	1	129
2.6000E+06	4.4300E+00	2.8000E+06	4.2700E+00	3.0000E+06	4.1400E+00	1025	3	1	130
3.2000E+06	4.0600E+00	3.4000E+06	3.9800E+00	3.6000E+06	3.9200E+00	1025	3	1	131
3.8000E+06	3.8800E+00	4.0000E+06	3.8600E+00	4.5000E+06	3.6500E+00	1025	3	1	132
5.0000E+06	3.8600E+00	5.5000E+06	3.8800E+00	6.0000E+06	3.9100E+00	1025	3	1	133
6.5000E+06	3.9400E+00	6.8870E+06	3.9632E+00	6.9570E+06	3.9674E+00	1025	3	1	134
7.0280E+06	3.9728E+00	7.1000E+06	3.9800E+00	7.1740E+06	3.9874E+00	1025	3	1	135
7.3270E+06	4.0027E+00	7.4860E+06	4.0186E+00	7.7380E+06	4.0390E+00	1025	3	1	136
8.0080E+06	4.0606E+00	8.1990E+06	4.0759E+00	8.3990E+06	4.0919E+00	1025	3	1	137
8.6090E+06	4.1065E+00	8.8300E+06	4.1198E+00	9.0620E+06	4.1337E+00	1025	3	1	138
9.3070E+06	4.1484E+00	9.5650E+06	4.1626E+00	9.8390E+06	4.1736E+00	1025	3	1	139
1.0130E+07	4.2052E+00	1.0430E+07	4.2172E+00	1.0760E+07	4.2200E+00	1025	3	1	140
1.1110E+07	4.2156E+00	1.1480E+07	4.2008E+00	1.2080E+07	4.1884E+00	1025	3	1	141
1.2750E+07	4.1650E+00	1.3500E+07	4.1000E+00	1.4350E+07	3.9360E+00	1025	3	1	142
1.4650E+07	3.8700E+00	1.5000E+07	3.8000E+00			1025	3	1	143
0.0	0.0	0	0	0		01025	3	0	144
42000.0	9.5066E+01	0	0	0		01025	3	2	145
0.0	0.0	0	0	2		1071025	3	2	146
6	2	107	5			1025	3	2	147
1.0000E-03	5.0000E+00	1.5000E+00	5.0000E+00	4.0000E+00	5.0080E+00	1025	3	2	148
4.0000E+00	0.0000E+00	1.0000E+03	0.0000E+00	1.0000E+03	5.7800E+00	1025	3	2	149
1.2700E+03	6.5800E+00	1.5000E+03	5.9070E+00	2.0000E+03	4.7500E+00	1025	3	2	150
2.5000E+03	4.8930E+00	3.0000E+03	4.9830E+00	4.0000E+03	5.1400E+00	1025	3	2	151
5.0000E+03	5.3800E+00	6.0000E+03	5.5800E+00	7.0000E+03	5.7800E+00	1025	3	2	152
8.0000E+03	5.9450E+00	9.0000E+03	6.0850E+00	1.0000E+04	6.2000E+00	1025	3	2	153
1.5000E+04	6.6500E+00	2.0000E+04	7.0000E+00	2.5000E+04	7.3140E+00	1025	3	2	154
3.0000E+04	7.5400E+00	3.5000E+04	7.7060E+00	4.0000E+04	7.8020E+00	1025	3	2	155
4.5000E+04	7.8410E+00	5.0000E+04	7.8670E+00	6.0000E+04	7.9230E+00	1025	3	2	156
7.0000E+04	8.0150E+00	8.0000E+04	8.2260E+00	9.0000E+04	8.4580E+00	1025	3	2	157
1.0000E+05	8.7290E+00	1.2000E+05	8.9310E+00	1.4000E+05	9.0330E+00	1025	3	2	158
1.6000E+05	9.0840E+00	1.8000E+05	9.1040E+00	2.0000E+05	9.0850E+00	1025	3	2	159
3.0000E+05	8.4700E+00	4.0000E+05	8.2090E+00	4.5000E+05	8.0140E+00	1025	3	2	160
5.0000E+05	7.8320E+00	5.5000E+05	7.6120E+00	6.0000E+05	7.4300E+00	1025	3	2	161
6.5000E+05	7.2820E+00	7.0000E+05	7.1540E+00	7.5000E+05	7.0160E+00	1025	3	2	162
7.9000E+05	6.9090E+00	8.2000E+05	6.7020E+00	8.5000E+05	6.5220E+00	1025	3	2	163
9.0000E+05	6.2610E+00	9.5000E+05	6.0560E+00	1.0000E+06	5.8790E+00	1025	3	2	164
1.0500E+06	5.7230E+00	1.1000E+06	5.5700E+00	1.1500E+06	5.4280E+00	1025	3	2	165
1.2000E+06	5.2920E+00	1.2500E+06	5.1960E+00	1.3000E+06	5.1050E+00	1025	3	2	166
1.3500E+06	5.0260E+00	1.4000E+06	4.9540E+00	1.4500E+06	4.8740E+00	1025	3	2	167
1.5000E+06	4.7900E+00	1.6000E+06	4.5260E+00	1.8000E+06	3.9490E+00	1025	3	2	168
2.0000E+06	3.3860E+00	2.2000E+06	3.0370E+00	2.4000E+06	2.7280E+00	1025	3	2	169
2.6000E+06	2.4480E+00	2.8000E+06	2.1990E+00	3.0000E+06	1.9790E+00	1025	3	2	170
3.2000E+06	1.8200E+00	3.4000E+06	1.7010E+00	3.6000E+06	1.6210E+00	1025	3	2	171
3.8000E+06	1.6010E+00	4.0000E+06	1.6210E+00	4.5000E+06	1.7210E+00	1025	3	2	172
5.0000E+06	1.8120E+00	5.5000E+06	1.8830E+00	6.0000E+06	1.9620E+00	1025	3	2	173
6.5000E+06	2.0330E+00	6.8870E+06	2.0794E+00	6.9570E+06	2.0878E+00	1025	3	2	174
7.0280E+06	2.0981E+00	7.1000E+06	2.1112E+00	7.1740E+06	2.1247E+00	1025	3	2	175
7.3270E+06	2.1525E+00	7.4860E+06	2.1815E+00	7.7380E+06	2.2125E+00	1025	3	2	176
8.0080E+06	2.2447E+00	8.1990E+06	2.2635E+00	8.3990E+06	2.2831E+00	1025	3	2	177
8.6090E+06	2.3019E+00	8.8300E+06	2.3201E+00	9.0620E+06	2.3377E+00	1025	3	2	178
9.3070E+06	2.3524E+00	9.5650E+06	2.3666E+00	9.8390E+06	2.3776E+00	1025	3	2	179
1.0130E+07	2.4092E+00	1.0430E+07	2.4212E+00	1.0760E+07	2.4240E+00	1025	3	2	180
1.1110E+07	2.4196E+00	1.1480E+07	2.4048E+00	1.2080E+07	2.3924E+00	1025	3	2	181
1.2750E+07	2.3690E+00	1.3500E+07	2.3040E+00	1.4350E+07	2.1400E+00	1025	3	2	182
1.4650E+07	2.0740E+00	1.5000E+07	2.0040E+00			1025	3	2	183
0.0	0.0	0	0	0		01025	3	0	184
42000.0	9.5066E+01	0	99	0		01025	3	4	185
0.0	0.0	0	0	2		721025	3	4	186

2	2	72	5	1025	3	4	187
2.0000E+05	0.0000E+00	3.0000E+05	1.4000E-01	4.0000E+05	2.4500E-01	1025	3 4 187
4.5000E+05	2.7200E-01	5.0000E+05	2.8500E-01	5.5000E+05	3.4700E-01	1025	3 4 188
6.0000E+05	3.7000E-01	6.5000E+05	3.7000E-01	7.0000E+05	3.5000E-01	1025	3 4 189
7.5000E+05	3.5000E-01	7.9000E+05	3.5000E-01	8.2000E+05	4.7700E-01	1025	3 4 190
8.5000E+05	5.7700E-01	9.0000E+05	7.2000E-01	9.5000E+05	8.0600E-01	1025	3 4 191
1.0000E+06	8.6500E-01	1.0500E+06	9.0200E-01	1.1000E+06	9.3600E-01	1025	3 4 192
1.1500E+06	9.6000E-01	1.2000E+06	9.7700E-01	1.2500E+06	9.9100E-01	1025	3 4 193
1.3000E+06	1.0010E+00	1.3500E+06	9.9900E-01	1.4000E+06	9.8900E-01	1025	3 4 194
1.4500E+06	9.8300E-01	1.5000E+06	9.8000E-01	1.6000E+06	1.0700E+00	1025	3 4 195
1.8000E+06	1.3500E+00	2.0000E+06	1.6650E+00	2.2000E+06	1.7760E+00	1025	3 4 196
2.4000E+06	1.8760E+00	2.6000E+06	1.9670E+00	2.8000E+06	2.0570E+00	1025	3 4 197
3.0000E+06	2.1480E+00	3.2000E+06	2.2280E+00	3.4000E+06	2.2680E+00	1025	3 4 198
3.6000E+06	2.2890E+00	3.8000E+06	2.2690E+00	4.0000E+06	2.2290E+00	1025	3 4 199
4.5000E+06	2.1200E+00	5.0000E+06	2.0400E+00	5.5000E+06	1.9900E+00	1025	3 4 200
6.0000E+06	1.9410E+00	6.5000E+06	1.9010E+00	5.8870E+06	1.8780E+00	1025	3 4 201
6.9570E+06	1.8734E+00	7.0280E+06	1.8675E+00	7.1000E+06	1.8599E+00	1025	3 4 202
7.1740E+06	1.8515E+00	7.3270E+06	1.8330E+00	7.4860E+06	1.8123E+00	1025	3 4 203
7.7380E+06	1.7809E+00	8.0080E+06	1.7396E+00	8.1990E+06	1.7124E+00	1025	3 4 204
8.3990E+06	1.6837E+00	8.6090E+06	1.6508E+00	8.8300E+06	1.6113E+00	1025	3 4 205
9.0620E+06	1.5592E+00	9.3070E+06	1.4996E+00	9.5650E+06	1.4266E+00	1025	3 4 206
9.8390E+06	1.3433E+00	1.0130E+07	1.2518E+00	1.0430E+07	1.1558E+00	1025	3 4 207
1.0760E+07	1.0609E+00	1.1110E+07	9.7090E-01	1.1480E+07	8.8830E-01	1025	3 4 208
1.2080E+07	7.8170E-01	1.2750E+07	6.9690E-01	1.3500E+07	6.1200E-01	1025	3 4 209
1.4350E+07	5.2620E-01	1.4650E+07	5.0130E-01	1.5000E+07	4.7620E-01	1025	3 4 210
0.0	0.0	0	0	0	0	1025	3 0 211
42000.0	9.5066E+01	0	0	0	0	0	1025 3 16 212
0.0	-6.8160E+06	0	0	2	2	281025	3 16 213
2	2	28	5	1025	3	16	214
6.8870E+06	0.0000E+00	6.9570E+06	4.0000E-04	7.0280E+06	1.5000E-03	1025	3 16 215
7.1000E+06	3.3000E-03	7.1740E+06	5.6000E-03	7.3270E+06	1.1700E-02	1025	3 16 216
7.4860E+06	1.9400E-02	7.7380E+06	4.0400E-02	8.0080E+06	7.1300E-02	1025	3 16 217
8.1990E+06	9.5100E-02	8.3990E+06	1.2030E-01	8.6090E+06	1.4920E-01	1025	3 16 218
8.8300E+06	1.8390E-01	9.0620E+06	2.3240E-01	9.3070E+06	2.9210E-01	1025	3 16 219
9.5650E+06	3.6520E-01	9.8390E+06	4.4860E-01	1.0130E+07	5.4030E-01	1025	3 16 220
1.0430E+07	6.3640E-01	1.0760E+07	7.3140E-01	1.1110E+07	8.2150E-01	1025	3 16 221
1.1480E+07	9.0420E-01	1.2080E+07	1.0110E+00	1.2750E+07	1.0960E+00	1025	3 16 222
1.3500E+07	1.1810E+00	1.4350E+07	1.2670E+00	1.4650E+07	1.2890E+00	1025	3 16 223
1.5000E+07	1.3050E+00	0	0	0	0	1025	3 16 224
0.0	0.0	0	0	0	0	0	1025 3 0 225
42000.0	9.5066E+01	0	0	0	0	0	1025 3 17 226
0.0	-1.4220E+07	0	0	2	2	31025	3 17 227
2	2	3	5	1025	3	17	228
1.4350E+07	0.0000E+00	1.4650E+07	3.0000E-03	1.5000E+07	1.2100E-02	1025	3 17 229
0.0	0.0	0	0	0	0	0	1025 3 0 230
42000.0	9.5066E+01	0	0	0	0	0	1025 3102 231
0.0	9.1600E+06	0	0	1	1	1311025	3102 232
131	5	5	5	1025	3	102	233
1.0000E-03	6.2200E+00	1.0000E-02	3.4460E+00	2.0000E-02	2.8860E+00	1025	3102 234
2.5300E-02	2.7000E+00	4.0000E-02	2.4170E+00	5.0000E-02	2.1690E+00	1025	3102 235
8.0000E-02	2.0070E+00	1.0000E-01	1.9000E+00	2.0000E-01	1.5880E+00	1025	3102 236
4.0000E-01	1.3260E+00	6.0000E-01	1.1930E+00	8.0000E-01	1.1040E+00	1025	3102 237
1.0000E+00	1.0400E+00	1.5000E+00	9.3400E-01	4.0000E+00	7.3000E-01	1025	3102 238
4.0000E+00	6.1600E-01	2.0000E+01	5.0000E-01	9.0000E+01	4.0000E-01	1025	3102 239
2.0000E+02	3.0000E-01	3.0000E+02	6.0000E-01	5.7500E+02	6.0000E-01	1025	3102 240
6.8500E+02	2.5000E+00	7.4000E+02	2.5000E+00	7.7000E+02	2.3600E+00	1025	3102 241
8.0000E+02	2.2300E+00	8.5000E+02	2.0300E+00	9.0000E+02	1.9300E+00	1025	3102 242
9.5000E+02	1.8700E+00	1.0000E+03	1.8500E+00	1.0000E+03	1.8520E+00	1025	3102 243
1.2700E+03	2.4200E+00	1.5000E+03	2.0930E+00	2.0000E+03	1.9000E+00	1025	3102 244
2.5000E+03	1.7470E+00	3.0000E+03	1.6670E+00	4.0000E+03	1.5400E+00	1025	3102 245
5.0000E+03	1.3200E+00	6.0000E+03	1.1500E+00	7.0000E+03	9.8000E-01	1025	3102 246
8.0000E+03	8.4500E-01	9.0000E+03	7.3500E-01	1.0000E+04	6.5000E-01	1025	3102 247
							248

1.5000E+04	3.8000E-01	2.0000E+04	2.6000E-01	2.5000E+04	1.8600E-01	1025	3102	249
3.0000E+04	1.4000E-01	3.5000E+04	1.1400E-01	4.0000E+04	9.8000E-02	1025	3102	250
4.5000E+04	8.9000E-02	5.0000E+04	8.3000E-02	5.0000E+04	7.7000E-02	1025	3102	251
7.0000E+04	7.5000E-02	8.0000E+04	7.4000E-02	9.0000E+04	7.2000E-02	1025	3102	252
1.0000E+05	7.1000E-02	1.2000E+05	6.9000E-02	1.4000E+05	6.7000E-02	1025	3102	253
1.6000E+05	6.6000E-02	1.8000E+05	6.6000E-02	2.0000E+05	6.5000E-02	1025	3102	254
3.0000E+05	6.0000E-02	4.0000E+05	5.6000E-02	4.5000E+05	5.4000E-02	1025	3102	255
5.0000E+05	5.3000E-02	5.5000E+05	5.1000E-02	6.0000E+05	5.0000E-02	1025	3102	256
6.5000E+05	4.8000E-02	7.0000E+05	4.6000E-02	7.5000E+05	4.4000E-02	1025	3102	257
7.9000E+05	4.3000E-02	8.2000E+05	4.2000E-02	8.5000E+05	4.1000E-02	1025	3102	258
9.0000E+05	3.9000E-02	9.5000E+05	3.8000E-02	1.0000E+06	3.6000E-02	1025	3102	259
1.0500E+06	3.5000E-02	1.1000E+06	3.4000E-02	1.1500E+06	3.2000E-02	1025	3102	260
1.2000E+06	3.1000E-02	1.2500E+06	3.0000E-02	1.3000E+06	2.9000E-02	1025	3102	261
1.3500E+06	2.8000E-02	1.4000E+06	2.7000E-02	1.4500E+06	2.6000E-02	1025	3102	262
1.5000E+06	2.5000E-02	1.6000E+06	2.4000E-02	1.8000E+06	2.1000E-02	1025	3102	263
2.0000E+06	1.9000E-02	2.2000E+06	1.7000E-02	2.4000E+06	1.6000E-02	1025	3102	264
2.6000E+06	1.5000E-02	2.8000E+06	1.4000E-02	3.0000E+06	1.3000E-02	1025	3102	265
3.2000E+06	1.2000E-02	3.4000E+06	1.1000E-02	3.6000E+06	1.0000E-02	1025	3102	266
3.8000E+06	1.0000E-02	4.0000E+06	1.0000E-02	4.5000E+06	9.0000E-03	1025	3102	267
5.0000E+06	8.0000E-03	5.5000E+06	7.0000E-03	6.0000E+06	7.0000E-03	1025	3102	268
6.5000E+06	6.0000E-03	6.8870E+06	5.8000E-03	6.9570E+06	5.8000E-03	1025	3102	269
7.0280E+06	5.7000E-03	7.1000E+06	5.6000E-03	7.1740E+06	5.6000E-03	1025	3102	270
7.3270E+06	5.5000E-03	7.4860E+06	5.4000E-03	7.7380E+06	5.2000E-03	1025	3102	271
8.0080E+06	5.0000E-03	8.1990E+06	4.9000E-03	8.3990E+06	4.8000E-03	1025	3102	272
8.6090E+06	4.6000E-03	8.8300E+06	4.5000E-03	9.0620E+06	4.4000E-03	1025	3102	273
9.3070E+06	4.3000E-03	9.5650E+06	4.2000E-03	9.8390E+06	4.1000E-03	1025	3102	274
1.0130E+07	3.9000E-03	1.0430E+07	3.8000E-03	1.0760E+07	3.7000E-03	1025	3102	275
1.1110E+07	3.6000E-03	1.1480E+07	3.5000E-03	1.2080E+07	3.3000E-03	1025	3102	276
1.2750E+07	3.1000E-03	1.3500E+07	3.0000E-03	1.4350E+07	2.8000E-03	1025	3102	277
1.4650E+07	2.7000E-03	1.5000E+07	2.7000E-03			1025	3102	278
0.0	0.0	0	0	0	0	01025	3	0
42000.0	9.5066E+01	0	0	0	0	01025	3251	280
0.0	0.0	0	0	1		391025	3251	281
39	3					1025	3251	282
1.0000E-03	7.0127E-03	1.0000E+04	7.0127E-03	3.0000E+04	4.1980E-02	1025	3251	283
6.0000E+04	5.8911E-02	1.4000E+05	9.8074E-02	2.5000E+05	1.5188E-01	1025	3251	284
3.0000E+05	2.2007E-01	3.5000E+05	2.3877E-01	4.0000E+05	2.4139E-01	1025	3251	285
4.5000E+05	3.0312E-01	5.0000E+05	3.1037E-01	5.5000E+05	3.2615E-01	1025	3251	286
6.0000E+05	3.2142E-01	6.5000E+05	3.2771E-01	7.0000E+05	3.4240E-01	1025	3251	287
7.5000E+05	3.6206E-01	8.0000E+05	3.8619E-01	8.5000E+05	3.9906E-01	1025	3251	288
9.5000E+05	4.2811E-01	1.0000E+06	4.4149E-01	1.0500E+06	4.3181E-01	1025	3251	289
1.1000E+06	4.3141E-01	1.1500E+06	4.2578E-01	1.2000E+06	4.2307E-01	1025	3251	290
1.2500E+06	4.5586E-01	1.3000E+06	4.6783E-01	1.3500E+06	4.4382E-01	1025	3251	291
1.4000E+06	4.8120E-01	1.4500E+06	4.4317E-01	2.9000E+06	3.8030E-01	1025	3251	292
3.7000E+06	5.3369E-01	4.1000E+06	4.5516E-01	5.0000E+06	6.2730E-01	1025	3251	293
6.0000E+06	6.3039E-01	7.0000E+06	6.9724E-01	9.0000E+06	7.7485E-01	1025	3251	294
1.1000E+07	8.4312E-01	1.3000E+07	8.3500E-01	1.5000E+07	8.4658E-01	1025	3251	295
0.0	0.0	0	0	0	0	01025	3	0
42000.0	9.5066E+01	0	0	0	0	01025	3252	297
0.0	0.0	0	0	1		391025	3252	298
39	3					1025	3252	299
1.0000E-03	2.0891E-02	1.0000E+04	2.0891E-02	3.0000E+04	2.0156E-02	1025	3252	300
6.0000E+04	1.9800E-02	1.4000E+05	1.8976E-02	2.5000E+05	1.7844E-02	1025	3252	301
3.0000E+05	1.6410E-02	3.5000E+05	1.6017E-02	4.0000E+05	1.5963E-02	1025	3252	302
4.5000E+05	1.4663E-02	5.0000E+05	1.4511E-02	5.5000E+05	1.4180E-02	1025	3252	303
6.0000E+05	1.4279E-02	6.5000E+05	1.4146E-02	7.0000E+05	1.3837E-02	1025	3252	304
7.5000E+05	1.3423E-02	8.0000E+05	1.2916E-02	8.5000E+05	1.2645E-02	1025	3252	305
9.5000E+05	1.2035E-02	1.0000E+06	1.1754E-02	1.0500E+06	1.1957E-02	1025	3252	306
1.1000E+06	1.1965E-02	1.1500E+06	1.2085E-02	1.2000E+06	1.2142E-02	1025	3252	307
1.2500E+06	1.1452E-02	1.3000E+06	1.1200E-02	1.3500E+06	1.1706E-02	1025	3252	308
1.4000E+06	1.0920E-02	1.4500E+06	1.1720E-02	2.9000E+06	1.3039E-02	1025	3252	309
3.7000E+06	9.8299E-03	4.1000E+06	1.1478E-02	5.0000E+06	7.8502E-03	1025	3252	310

6.0000E+06	7.8260E-03	7.0000E+06	6.4538E-03	9.0000E+06	4.8455E-03	31025	3252	311
1.1000E+07	4.0763E-03	1.3000E+07	3.6719E-03	1.5000E+07	3.4759E-03	31025	3252	312
0.0	0.0	0	0	0	0	01025	3	0
42000.0	9.5066E+01	0	0	0	0	01025	3253	314
0.0	0.0	0	0	1	391025	3253	315	
39	3				1025	3253	316	
1.0000E-03	1.3977E-02	1.0000E+04	1.3977E-02	3.0000E+04	1.3885E-02	31025	3253	317
6.0000E+04	1.3789E-02	1.4000E+05	1.3562E-02	2.5000E+05	1.3242E-02	31025	3253	318
3.0000E+05	1.2920E-02	3.5000E+05	1.2844E-02	4.0000E+05	1.2840E-02	31025	3253	319
4.5000E+05	1.2228E-02	5.0000E+05	1.2164E-02	5.5000E+05	1.2106E-02	31025	3253	320
6.0000E+05	1.2154E-02	6.5000E+05	1.1981E-02	7.0000E+05	1.1928E-02	31025	3253	321
7.5000E+05	1.1669E-02	8.0000E+05	1.1505E-02	8.5000E+05	1.1142E-02	31025	3253	322
9.5000E+05	1.1189E-02	1.0000E+06	1.0958E-02	1.0500E+06	1.1115E-02	31025	3253	323
1.1000E+06	1.1062E-02	1.1500E+06	1.1566E-02	1.2000E+06	1.1516E-02	31025	3253	324
1.2500E+06	1.1087E-02	1.3000E+06	1.0828E-02	1.3500E+06	1.1330E-02	31025	3253	325
1.4000E+06	1.0944E-02	1.4500E+06	1.1775E-02	2.9000E+06	1.2751E-02	31025	3253	326
3.7000E+06	1.1500E-02	4.1000E+06	1.2221E-02	5.0000E+06	9.8007E-03	31025	3253	327
6.0000E+06	1.0177E-02	7.0000E+06	9.9170E-03	9.0000E+06	8.6094E-03	31025	3253	328
1.1000E+07	8.5911E-03	1.3000E+07	9.4684E-03	1.5000E+07	1.0060E-02	31025	3253	329
0.0	0.0	0	0	0	0	01025	3	0
0.0	0.0	0	0	0	0	01025	0	0
42000.0	9.5066E+01	1	1	0	0	01025	4	2
0.0	9.5066E+01	0	2	289	161025	4	2	333
1.0000E+00	7.0100E-03	2.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
9.9993E-01	1.2620E-02	8.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
9.9983E-01	1.8030E-02	1.6000E-04	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
9.9966E-01	2.3370E-02	2.7000E-04	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1.5000E-04	1.6030E-02	021025	4	2
9.9944E-01	2.8680E-02	4.1000E-04	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	2.6000E-04	2.3370E-02	021025	4	2
9.9916E-01	3.3970E-02	5.7000E-04	1.0000E-05	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	4.0000E-04	2.8670E-02	021025	4	2
9.9883E-01	3.9250E-02	7.7000E-04	1.0000E-05	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	1.0000E-05	5.7000E-04	3.3960E-02	021025	4	2
9.9844E-01	4.4520E-02	9.9000E-04	1.0000E-05	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	1.0000E-05	7.6000E-04	3.9230E-02	021025	4	2
9.9800E-01	4.9780E-02	1.2300E-03	2.0000E-05	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	1.0000E-05	9.8000E-04	4.4500E-02	021025	4	2
9.9750E-01	5.5030E-02	1.5100E-03	3.0000E-05	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	2.0000E-05	1.2300E-03	4.9750E-02	021025	4	2
9.9695E-01	6.0280E-02	1.8100E-03	4.0000E-05	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	3.0000E-05	1.5100E-03	5.5000E-02	021025	4	2
9.9634E-01	6.5520E-02	2.1500E-03	5.0000E-05	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	4.0000E-05	1.8100E-03	6.0240E-02	021025	4	2
9.9568E-01	7.0750E-02	2.5000E-03	6.0000E-05	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	01025	4	2
0.0000E+00	0.0000E+00	0.0000E+00	5.0000E-05	2.1400E-03	6.5470E-02	021025	4	2

9.9496E-01	7.5980E-02	2.8900E-03	7.0000E-05	0.0000E+00	0.0000E+00	1025	4	2	373
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1025	4	2	374
0.0000E+00	0.0000E+00	0.0000E+00	-6.0000E-05	2.5000E-03	-7.0700E-02	1025	4	2	375
9.9419E-01	8.1200E-02	3.3000E-03	0.0000E+00	0.0000E+00	0.0000E+00	1025	4	2	376
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1025	4	2	377
0.0000E+00	0.0000E+00	0.0000E+00	-7.0000E-05	2.8900E-03	-7.5920E-02	1025	4	2	378
9.9337E-01	8.4410E-02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1025	4	2	379
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1025	4	2	380
0.0000E+00	0.0000E+00	0.0000E+00	-9.0000E-05	3.3000E-03	-8.1130E-02	1025	4	2	381
9.9248E-01						1025	4	2	382
0.0	0.0	0	0	1		391025	4	2	383
39	3					1025	4	2	384
0.0	1.0000E-03	0	0	1		01025	4	2	385
0.0000E+00						1025	4	2	386
0.0	1.0000E+04	0	0	1		01025	4	2	387
0.0000E+00						1025	4	2	388
0.0	3.0000E+04	0	0	9		01025	4	2	389
3.5125E-02	2.2347E-02	2.8420E-03	-5.5007E-04	-3.6488E-04	5.0335E-06	1025	4	2	390
1.1377E-05	-1.2028E-05	-1.0376E-05				1025	4	2	391
0.0	6.0000E+04	0	0	9		01025	4	2	392
5.2087E-02	2.6391E-02	5.2925E-04	7.6823E-04	-3.1692E-04	-3.2987E-04	1025	4	2	393
1.5917E-04	1.0621E-04	-6.7730E-05				1025	4	2	394
0.0	1.4000E+05	0	0	9		01025	4	2	395
9.1333E-02	3.7225E-02	-3.0217E-03	5.3171E-04	2.0446E-04	-3.8001E-04	1025	4	2	396
-8.7271E-05	7.6350E-05	3.0869E-07				1025	4	2	397
0.0	2.5000E+05	0	0	9		01025	4	2	398
1.4527E-01	5.5226E-02	-3.7985E-03	1.1933E-03	-3.6526E-04	-5.6319E-04	1025	4	2	399
-6.6215E-05	1.5341E-04	-5.5679E-06				1025	4	2	400
0.0	3.0000E+05	0	0	9		01025	4	2	401
2.1372E-01	9.4527E-02	1.6552E-02	6.0308E-03	-8.1222E-04	0.0000E+00	1025	4	2	402
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	403
0.0	3.5000E+05	0	0	9		01025	4	2	404
2.3248E-01	1.0774E-01	2.0406E-02	1.1181E-02	4.6760E-03	0.0000E+00	1025	4	2	405
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	406
0.0	4.0000E+05	0	0	9		01025	4	2	407
2.3516E-01	1.1021E-01	1.2589E-02	1.5947E-02	-3.7291E-03	0.0000E+00	1025	4	2	408
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	409
0.0	4.5000E+05	0	0	9		01025	4	2	410
2.9691E-01	1.2100E-01	2.5457E-02	3.5257E-03	5.7103E-03	0.0000E+00	1025	4	2	411
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	412
0.0	5.0000E+05	0	0	9		01025	4	2	413
3.0426E-01	1.2344E-01	3.4275E-03	1.2577E-02	-4.7217E-03	0.0000E+00	1025	4	2	414
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	415
0.0	5.5000E+05	0	0	9		01025	4	2	416
3.2003E-01	1.3794E-01	2.7283E-02	1.8857E-02	1.2000E-02	0.0000E+00	1025	4	2	417
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	418
0.0	6.0000E+05	0	0	9		01025	4	2	419
3.1535E-01	1.3652E-01	2.1062E-02	1.2982E-02	1.7158E-03	0.0000E+00	1025	4	2	420
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	421
0.0	6.5000E+05	0	0	9		01025	4	2	422
3.2163E-01	1.2774E-01	1.3412E-02	7.8628E-03	-5.2264E-03	0.0000E+00	1025	4	2	423
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	424
0.0	7.0000E+05	0	0	9		01025	4	2	425
3.3639E-01	1.4161E-01	1.7639E-02	1.0553E-02	-9.4114E-04	0.0000E+00	1025	4	2	426
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	427
0.0	7.5000E+05	0	0	9		01025	4	2	428
3.5607E-01	1.4344E-01	2.3660E-02	5.4494E-03	-4.0699E-03	0.0000E+00	1025	4	2	429
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	430
0.0	8.0000E+05	0	0	9		01025	4	2	431
3.8019E-01	1.6117E-01	4.1865E-02	1.0733E-02	-1.6772E-02	0.0000E+00	1025	4	2	432
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	433
0.0	8.5000E+05	0	0	9		01025	4	2	434

3.9310E-01	1.4719E-01	2.4608E-02	6.4057E-03	5.0063E-03	0.0000E+00	1025	4	2	435
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	436
0.0	9.5000E+05	0	0	9		01025	4	2	437
4.2241E-01	1.9187E-01	4.3178E-02	1.8884E-02	5.3318E-04	0.0000E+00	1025	4	2	438
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	439
0.0	1.0000E+06	0	0	9		01025	4	2	440
4.3575E-01	1.9222E-01	5.2903E-02	1.9829E-02	7.9664E-03	0.0000E+00	1025	4	2	441
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	442
0.0	1.0500E+06	0	0	9		01025	4	2	443
4.2607E-01	1.9101E-01	4.2311E-02	1.7624E-02	7.7592E-03	0.0000E+00	1025	4	2	444
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	445
0.0	1.1000E+06	0	0	9		01025	4	2	446
4.2570E-01	1.8613E-01	3.5756E-02	1.3644E-02	2.6700E-03	0.0000E+00	1025	4	2	447
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	448
0.0	1.1500E+06	0	0	9		01025	4	2	449
4.2027E-01	2.1959E-01	5.0712E-02	2.8392E-02	1.2699E-03	0.0000E+00	1025	4	2	450
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	451
0.0	1.2000E+06	0	0	9		01025	4	2	452
4.1755E-01	2.1165E-01	3.7023E-02	2.2008E-02	4.9078E-03	0.0000E+00	1025	4	2	453
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	454
0.0	1.2500E+06	0	0	9		01025	4	2	455
4.5029E-01	2.2284E-01	6.8910E-02	2.6652E-02	1.1586E-02	0.0000E+00	1025	4	2	456
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	457
0.0	1.3000E+06	0	0	9		01025	4	2	458
4.6227E-01	2.2007E-01	6.6934E-02	2.5269E-02	7.4444E-03	0.0000E+00	1025	4	2	459
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	460
0.0	1.3500E+06	0	0	9		01025	4	2	461
4.3831E-01	2.2510E-01	6.1318E-02	2.7800E-02	5.5560E-03	0.0000E+00	1025	4	2	462
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	463
0.0	1.4000E+06	0	0	9		01025	4	2	464
4.7580E-01	2.4808E-01	8.1446E-02	3.3770E-02	1.0017E-02	0.0000E+00	1025	4	2	465
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	466
0.0	1.4500E+06	0	0	9		01025	4	2	467
4.3788E-01	2.5975E-01	8.0517E-02	4.1244E-02	5.4415E-03	0.0000E+00	1025	4	2	468
0.0000E+00	0.0000E+00	0.0000E+00				1025	4	2	469
0.0	2.9000E+06	0	0	9		01025	4	2	470
3.7500E-01	2.6437E-01	1.0979E-01	5.9107E-02	1.1425E-02	1.4938E-02	1025	4	2	471
-1.8901E-02	-5.8278E-03	8.0767E-03				1025	4	2	472
0.0	3.7000E+06	0	0	9		01025	4	2	473
5.2859E-01	3.6137E-01	2.5276E-01	2.0623E-01	9.2484E-02	1.4069E-02	1025	4	2	474
7.6113E-04	-3.5216E-04	-5.1198E-03				1025	4	2	475
0.0	4.1000E+06	0	0	9		01025	4	2	476
4.4986E-01	3.1097E-01	1.7970E-01	1.9180E-01	1.1683E-01	2.7565E-02	1025	4	2	477
-1.1614E-02	-1.2425E-02	-5.9659E-03				1025	4	2	478
0.0	5.0000E+06	0	0	9		01025	4	2	479
6.2282E-01	3.9808E-01	2.7899E-01	2.0819E-01	1.1151E-01	-1.5095E-02	1025	4	2	480
-4.5139E-02	-1.2562E-02	-4.1144E-04				1025	4	2	481
0.0	6.0000E+06	0	0	9		01025	4	2	482
6.2414E-01	4.2078E-01	3.3081E-01	2.8364E-01	2.3186E-01	1.1725E-01	1025	4	2	483
3.6328E-02	1.1932E-02	4.9173E-03				1025	4	2	484
0.0	7.0000E+06	0	0	12		01025	4	2	485
6.9022E-01	5.1080E-01	4.0411E-01	3.4054E-01	3.0979E-01	2.1703E-01	1025	4	2	486
9.8600E-02	3.3987E-02	6.9533E-03	1.5139E-03	4.1119E-04	2.3967E-05	1025	4	2	487
0.0	9.0000E+06	0	0	12		01025	4	2	488
7.6724E-01	5.8915E-01	4.7092E-01	3.9002E-01	3.2547E-01	2.5569E-01	1025	4	2	489
1.4467E-01	5.7036E-02	1.6886E-02	5.1922E-03	1.9433E-03	1.1277E-04	1025	4	2	490
0.0	1.1000E+07	0	0	14		01025	4	2	491
8.0419E-01	6.5403E-01	5.3822E-01	4.4241E-01	3.5783E-01	2.8305E-01	1025	4	2	492
1.8653E-01	9.2238E-02	3.9650E-02	1.7781E-02	7.4136E-03	9.8883E-04	1025	4	2	493
7.2586E-04	1.4417E-04					1025	4	2	494
0.0	1.3000E+07	0	0	16		01025	4	2	495
8.2380E-01	7.1080E-01	6.0119E-01	5.0186E-01	4.0718E-01	3.2235E-01	1025	4	2	496

2,3286E-01	1.3870E-01	7.4209E-02	4,0970E-02	1,8714E-02	4,3938E-03	1025	4	2	497
2,9735E-03	4,8152E-04	9,7871E-05	2,2631E-05			1025	4	2	498
0.0	1,5000E+07	0	0	16		01025	4	2	499
8,3336E-01	7,4059E-01	6,3299E-01	5,4242E-01	4,4325E-01	3,5512E-01	1025	4	2	500
2,6482E-01	1,7473E-01	9,9143E-02	5,7974E-02	3,0200E-02	1,0699E-02	1025	4	2	501
6,6918E-03	7,8124E-04	2,1139E-04	6,3630E-05			1025	4	2	502
0.0	0.0	0	0	0		01025	4	0	503
0.0	0.0	0	0	0		01025	0	0	504
42000.0	9,5066E+01	0	0	5		01025	5	4	505
0.0	2,0000E+05	0	3	1		241025	5	4	506
24	3					1025	5	4	507
2,0000E+05	1,0000E+00	5,0000E+05	1,0000E+00	5,5000E+05	8,2710E-01	1025	5	4	508
6,0000E+05	7,1620E-01	6,5000E+05	6,2160E-01	7,0000E+05	5,2860E-01	1025	5	4	509
7,5000E+05	4,5710E-01	7,9000E+05	4,0860E-01	8,2000E+05	2,8720E-01	1025	5	4	510
8,5000E+05	2,2880E-01	9,0000E+05	1,7780E-01	9,5000E+05	1,5260E-01	1025	5	4	511
1,0000E+06	1,3870E-01	1,0500E+06	1,2750E-01	1,1000E+06	1,1750E-01	1025	5	4	512
1,1500E+06	1,1040E-01	1,2000E+06	1,0440E-01	1,2500E+06	1,0090E-01	1025	5	4	513
1,3000E+06	9,7900E-02	1,3500E+06	9,3100E-02	1,4000E+06	9,2000E-02	1025	5	4	514
1,4500E+06	9,1600E-02	1,5000E+06	9,1800E-02	2,0000E+06	0,0000E+00	1025	5	4	515
0.0	5,0000E+05	0	3	1		231025	5	4	516
23	3					1025	5	4	517
5,0000E+05	0,0000E+00	5,5000E+05	1,7290E-01	6,0000E+05	2,8380E-01	1025	5	4	518
6,5000E+05	3,7840E-01	7,0000E+05	4,7140E-01	7,5000E+05	5,4290E-01	1025	5	4	519
7,9000E+05	5,9140E-01	8,2000E+05	4,6120E-01	8,5000E+05	3,8990E-01	1025	5	4	520
9,0000E+05	3,0830E-01	9,5000E+05	2,5810E-01	1,0000E+06	2,1740E-01	1025	5	4	521
1,0500E+06	1,8290E-01	1,1000E+06	1,5490E-01	1,1500E+06	1,3330E-01	1025	5	4	522
1,2000E+06	1,1980E-01	1,2500E+06	1,1200E-01	1,3000E+06	1,0890E-01	1025	5	4	523
1,3500E+06	1,0610E-01	1,4000E+06	1,0410E-01	1,4500E+06	1,0270E-01	1025	5	4	524
1,5000E+06	1,0210E-01	2,0000E+06	0,0000E+00			1025	5	4	525
0.0	7,9000E+05	0	3	1		171025	5	4	526
17	3					1025	5	4	527
7,9000E+05	0,0000E+00	8,2000E+05	2,5160E-01	8,5000E+05	3,8130E-01	1025	5	4	528
9,0000E+05	5,1390E-01	9,5000E+05	5,8930E-01	1,0000E+06	6,4390E-01	1025	5	4	529
1,0500E+06	6,8960E-01	1,1000E+06	7,2120E-01	1,1500E+06	7,4480E-01	1025	5	4	530
1,2000E+06	7,5530E-01	1,2500E+06	7,6190E-01	1,3000E+06	7,6220E-01	1025	5	4	531
1,3500E+06	7,6080E-01	1,4000E+06	7,5330E-01	1,4500E+06	7,4260E-01	1025	5	4	532
1,5000E+06	7,2450E-01	2,0000E+06	0,0000E+00			1025	5	4	533
0.0	1,0500E+06	0	3	1		111025	5	4	534
11	3					1025	5	4	535
1,0500E+06	0,0000E+00	1,1000E+06	6,4000E-03	1,1500E+06	1,1500E-02	1025	5	4	536
1,2000E+06	2,0500E-02	1,2500E+06	2,5200E-02	1,3000E+06	3,1000E-02	1025	5	4	537
1,3500E+06	4,0000E-02	1,4000E+06	5,0600E-02	1,4500E+06	6,3100E-02	1025	5	4	538
1,5000E+06	8,1600E-02	2,0000E+06	0,0000E+00			1025	5	4	539
0.0	0.0	0	9	1		31025	5	4	540
3	3					1025	5	4	541
1,5000E+06	0,0000E+00	2,0000E+06	1,0000E+00	1,5000E+07	1,0000E+00	1025	5	4	542
0.0	0.0	0	0	1		21025	5	4	543
2	5					1025	5	4	544
1,5000E+06	4,0340E+05	1,5000E+07	1,2758E+06			1025	5	4	545
0.0	0.0	0	0	0		01025	5	0	546
42000.0	9,5066E+01	0	0	1		01025	5	16	547
0.0	0.0	0	9	1		21025	5	16	548
2	2					1025	5	16	549
6,8870E+06	1,0000E+00	1,5000E+07	1,0000E+00			1025	5	16	550
0.0	0.0	0	0	1		21025	5	16	551
2	2					1025	5	16	552
6,8870E+06	1,0000E+05	1,5000E+07	2,8400E+06			1025	5	16	553
0.0	0.0	0	0	0		01025	5	0	554
42000.0	9,5066E+01	0	0	1		01025	5	17	555
0.0	0.0	0	9	1		21025	5	17	556
2	2					1025	5	17	557
1,4350E+07	1,0000E+00	1,5000E+07	1,0000E+00			1025	5	17	558

APPENDIX E
ENDF/B Listing for Gadolinium

64000.0	1.5590E+02	1	0	0	01030	1451	1	
0.0	0.0	0	0	31	01030	1451	2	
GADCLINIUM CROSS SECTIONS MATERIAL 1030					1030	1451	3	
THE MAIN SOURCE FOR THIS EVALUATION IS KFK-352 BY SCHMIDT AND SIEP					1030	1451	4	
THIS DATA WAS PREPARED BY E.PENNINGTON,A.N.L.,IN OCTOBER 1966.					1030	1451	5	
THE FOLLOWING MODIFICATIONS WERE MADE OF THE DATA FROM THE MAIN					1030	1451	6	
SOURCE-					1030	1451	7	
RESONANCE PARAMETERS FOR THE FIRST 5 RESONANCES ARE FROM N.S.E.,					1030	1451	8	
8,183,(1960),PARAMETERS FOR 24 OTHER RESONANCES ARE FROM BNL-325,					1030	1451	9	
THE CROSS SECTIONS ARE CALCULATED ENTIRELY FROM RESONANCE					1030	1451	10	
PARAMETERS UP TO 50 EV.					1030	1451	11	
FROM 50 EV.TO 10 KEV.,THE TOTAL CROSS SECTION WAS READ FROM					1030	1451	12	
BNL-325.IT WAS SPLIT INTO CAPTURE AND SCATTERING COMPONENTS USING					1030	1451	13	
EQUATIONS 39,40,43 AND 44 OF KFK-352.					1030	1451	14	
N-2N AND N-3N CROSS SECTIONS WERE OBTAINED FROM S.PEARLSTEIN,SEE					1030	1451	15	
N.S.E.23,238-250,(1965).					1030	1451	16	
CROSS SECTIONS WERE EXTENDED FROM 10 TO 15 MEV.THE N-GAMMA CROSS					1030	1451	17	
SECTION WAS EXTRAPOLATED LINEARLY ON A LOG-LOG SCALE.THE TOTAL					1030	1451	18	
CROSS SECTION WAS EXTENDED USING BNL-325 POINTS AS A GUIDE.THE					1030	1451	19	
REACTION CROSS SECTION WAS EXTRAPOLATED TO A VALUE AT 15 MEV.					1030	1451	20	
EQUAL TO 1.01 TIMES THE SUM OF N-2N,N-3N,AND N-GAMMA CROSS					1030	1451	21	
SECTIONS.					1030	1451	22	
THE INELASTIC SCATTERING CROSS SECTION WAS FOUND BY SUBTRACTING					1030	1451	23	
OTHER REACTIONS FROM THE REACTION CROSS SECTION,AND IS THEREFORE					1030	1451	24	
SMALLER THAN THAT IN KFK-352 ABOVE THE N-2N THRESHOLD.					1030	1451	25	
LEGENDRE COEFFICIENTS FOR ELASTIC SCATTERING FROM H.ALTER WERE					1030	1451	26	
USED FROM 0.3 TO 1.5 MEV.(SEE NAA-SR-11980 VOL IV),BELOW 0.3 MEV.					1030	1451	27	
COEFFICIENTS WERE FOUND BY EXTRAPOLATION.ABOVE 1.5 MEV.,THE					1030	1451	28	
COEFFICIENTS ARE BASED ON ARACLS-2 PROBLEMS USING ROUGHLY THE					1030	1451	29	
SAME PARAMETERS AS IN KFK-352.					1030	1451	30	
VALUES OF MU BAR LAB,XI,AND GAMMA WERE CALCULATED FROM THE					1030	1451	31	
LEGENDRE COEFFICIENTS.					1030	1451	32	
PARAMETERS FOR THE FREE GAS THERMAL SCATTERING LAW WERE INCLUDED.					1030	1451	33	
0.0	0.0	0	0	0	01030	1 0	34	
0.0	0.0	0	0	0	01030	0 0	35	
64000.0	1.5590E+02	0	0	2	01030	2151	36	
64155.0	1.4730E+01	0	0	1	01030	2151	37	
1.0000E-03	5.0000E+01	1	1	0	01030	2151	38	
1.5000E+00	7.9100E-01	0	0	1	01030	2151	39	
1.7362E-03	0.0000E+00	0	0	144	241030	2151	40	
2.6800E-02	2.0000E+00	1.0810E-01	1.0400E-04	1.0800E-01	0.0000E+00	01030	2151	41
2.0080E+00	1.0000E+00	1.1037E-01	3.7100E-04	1.1000E-01	0.0000E+00	01030	2151	42
2.5680E+00	2.0000E+00	1.1274E-01	1.7360E-03	1.1100E-01	0.0000E+00	01030	2151	43
6.4900E+00	2.0000E+00	1.0851E-01	2.5100E-03	1.0600E-01	0.0000E+00	01030	2151	44
7.9500E+00	1.5000E+00	1.4154E-01	1.5400E-03	1.4000E-01	0.0000E+00	01030	2151	45
1.0100E+01	1.5000E+00	1.0418E-01	1.8000E-04	1.0400E-01	0.0000E+00	01030	2151	46
1.1670E+01	1.5000E+00	1.0448E-01	4.8000E-04	1.0400E-01	0.0000E+00	01030	2151	47
1.2100E+01	1.5000E+00	1.0490E-01	9.0000E-04	1.0400E-01	0.0000E+00	01030	2151	48
1.4700E+01	1.5000E+00	1.0220E-01	2.2000E-03	1.0000E-01	0.0000E+00	01030	2151	49
2.0200E+01	1.5000E+00	9.6100E-02	5.1000E-03	9.1000E-02	0.0000E+00	01030	2151	50
2.1300E+01	1.5000E+00	8.0000E-02	1.8000E-02	8.2000E-02	0.0000E+00	01030	2151	51
2.3900E+01	1.5000E+00	1.1620E-01	6.2000E-03	1.1000E-01	0.0000E+00	01030	2151	52
2.7900E+01	1.5000E+00	1.0490E-01	9.0000E-04	1.0400E-01	0.0000E+00	01030	2151	53
2.9900E+01	1.5000E+00	1.1360E-01	9.6000E-03	1.0400E-01	0.0000E+00	01030	2151	54
3.0500E+01	1.5000E+00	1.1660E-01	1.2600E-02	1.0400E-01	0.0000E+00	01030	2151	55
3.2100E+01	1.5000E+00	1.0560E-01	1.6000E-03	1.0400E-01	0.0000E+00	01030	2151	56
3.5000E+01	1.5000E+00	1.1160E-01	7.6000E-03	1.0400E-01	0.0000E+00	01030	2151	57
3.5600E+01	1.5000E+00	1.0620E-01	2.2000E-03	1.0400E-01	0.0000E+00	01030	2151	58
3.7300E+01	1.5000E+00	1.1760E-01	1.3600E-02	1.0400E-01	0.0000E+00	01030	2151	59
3.9400E+01	1.5000E+00	1.0780E-01	3.8000E-03	1.0400E-01	0.0000E+00	01030	2151	60
4.0400E+01	1.5000E+00	1.0560E-01	1.6000E-03	1.0400E-01	0.0000E+00	01030	2151	61
4.4300E+01	1.5000E+00	1.2600E-01	2.2000E-02	1.0400E-01	0.0000E+00	01030	2151	62

4,6300E+01	1.5000E+00	1.0740E-01	3.4000E+03	1,0400E-01	0,0000E+00	01030	2151	63
4,7100E+01	1.5000E+00	1.1610E-01	1,2100E-02	1,0400E-01	0,0000E+00	01030	2151	64
64157,0	1.5680E-01	0	0	1	0	01030	2151	65
1,0000E-03	5,0000E+01	1	1	0	0	01030	2151	66
1,5000E+00	7,9100E-01	0	0	1	0	01030	2151	67
1,7362E-03	0,0000E+00	0	0	30	0	51030	2151	68
3,1400E-02	2,0000E+00	1,0647E-01	4,7200E+04	1,0600E-01	0,0000E+00	01030	2151	69
2,8250E+00	2,0000E+00	9,7345E-02	3,4500E+04	9,7000E-02	0,0000E+00	01030	2151	70
1,7100E+01	2,0000E+00	1,0180E-01	1,6800E-02	8,5000E-02	0,0000E+00	01030	2151	71
4,4300E+01	1,5000E+00	1,0400E-01	1,0000E-02	9,4000E-02	0,0000E+00	01030	2151	72
4,9000E+01	1,5000E+00	1,1100E-01	2,5000E-02	8,6000E-02	0,0000E+00	01030	2151	73
0,0	0,0	0	0	0	0	01030	2	74
0,0	0,0	0	0	0	0	01030	0	75
64000,0	1,5590E+02	0	0	0	0	01030	3	76
0,0	0,0	0	0	2	0	2421030	3	77
3	2	242	5	0	0	1030	3	78
1,0000E-03	0,0000E+00	5,0000E+01	0,0000E+00	5,0000E+01	1,3276E+01	011030	3	79
5,1000E+01	3,2000E+01	5,2000E+01	1,0000E+02	5,3000E+01	3,2000E+01	011030	3	80
5,3500E+01	7,5000E+01	5,4000E+01	2,8000E+01	5,5000E+01	1,4000E+01	011030	3	81
5,6000E+01	2,0000E+01	5,6500E+01	3,0000E+01	5,7000E+01	1,5000E+01	011030	3	82
5,7500E+01	3,2000E+01	5,8000E+01	1,3500E+02	5,9000E+01	6,0000E+01	011030	3	83
6,0000E+01	1,7000E+01	6,1000E+01	2,7000E+01	6,1500E+01	8,0000E+00	011030	3	84
6,2500E+01	5,0000E+01	6,3500E+01	8,0000E+00	6,5000E+01	4,5000E+01	011030	3	85
6,6000E+01	2,9000E+01	6,6500E+01	6,0000E+01	6,7000E+01	2,0000E+01	011030	3	86
6,7500E+01	1,0000E+01	6,9000E+01	4,0000E+01	7,0000E+01	7,0000E+00	011030	3	87
7,1000E+01	9,0000E+00	7,2000E+01	7,0000E+00	7,2500E+01	1,0000E+01	011030	3	88
7,3000E+01	7,0000E+00	7,4000E+01	1,0000E+01	7,5000E+01	1,6000E+01	011030	3	89
7,6500E+01	7,0000E+00	7,7700E+01	4,2000E+01	7,8000E+01	1,8000E+01	011030	3	90
7,9000E+01	6,0000E+01	8,0000E+01	1,2100E+02	8,1000E+01	1,5500E+02	011030	3	91
8,1500E+01	1,3000E+02	8,3000E+01	2,2000E+01	8,4000E+01	3,6000E+01	011030	3	92
8,6500E+01	1,4000E+01	8,8000E+01	3,9000E+01	8,9000E+01	1,1500E+01	011030	3	93
9,0000E+01	8,0000E+00	9,1000E+01	1,3000E+01	9,2000E+01	1,4000E+01	011030	3	94
9,2500E+01	2,0000E+01	9,3000E+01	2,7000E+01	9,4000E+01	1,7500E+01	011030	3	95
9,5400E+01	1,4000E+01	9,6000E+01	2,0000E+01	9,6500E+01	4,0000E+01	011030	3	96
9,7000E+01	5,0000E+01	9,7500E+01	3,0000E+01	9,8000E+01	4,0000E+01	011030	3	97
9,9000E+01	3,1000E+01	1,0000E+02	4,0000E+01	1,0050E+02	7,0000E+01	011030	3	98
1,0100E+02	7,0000E+01	1,0200E+02	2,4000E+01	1,0300E+02	2,0000E+01	011030	3	99
1,0400E+02	2,2000E+01	1,0450E+02	3,3000E+01	1,0500E+02	6,8000E+01	011030	3	100
1,0700E+02	4,0000E+01	1,0750E+02	3,8000E+01	1,0800E+02	2,0000E+01	011030	3	101
1,0900E+02	2,5000E+01	1,1000E+02	4,8000E+01	1,1100E+02	6,5000E+01	011030	3	102
1,1200E+02	3,8000E+01	1,1300E+02	4,0000E+01	1,1400E+02	4,4000E+01	011030	3	103
1,1500E+02	4,6000E+01	1,1600E+02	4,7000E+01	1,1700E+02	4,0000E+01	011030	3	104
1,1800E+02	2,2000E+01	1,1900E+02	2,2000E+01	1,2000E+02	3,2000E+01	011030	3	105
1,2100E+02	7,0000E+01	1,2150E+02	9,5000E+01	1,2200E+02	6,5000E+01	011030	3	106
1,2300E+02	6,2000E+01	1,2400E+02	7,4000E+01	1,2500E+02	5,9000E+01	011030	3	107
1,2700E+02	2,8000E+01	1,2800E+02	1,9000E+01	1,2900E+02	4,0000E+01	011030	3	108
1,2950E+02	5,0000E+01	1,3050E+02	5,0000E+01	1,3200E+02	3,7000E+01	011030	3	109
1,3300E+02	3,0000E+01	1,3500E+02	2,4000E+01	1,3700E+02	3,0000E+01	011030	3	110
1,3800E+02	5,5000E+01	1,3900E+02	7,6000E+01	1,4000E+02	5,6000E+01	011030	3	111
1,4100E+02	4,0000E+01	1,4150E+02	3,6000E+01	1,4200E+02	3,2000E+01	011030	3	112
1,4300E+02	5,0000E+01	1,4500E+02	4,0000E+01	1,4600E+02	3,1000E+01	011030	3	113
1,4700E+02	4,0000E+01	1,4800E+02	6,2000E+01	1,4900E+02	7,8000E+01	011030	3	114
1,5000E+02	7,9000E+01	1,5050E+02	8,0000E+01	1,5200E+02	5,0000E+01	011030	3	115
1,5300E+02	3,0000E+01	1,5500E+02	3,0000E+01	1,6000E+02	2,9000E+01	011030	3	116
1,6500E+02	2,7500E+01	1,7000E+02	4,1000E+01	1,7250E+02	5,6500E+01	011030	3	117
1,7500E+02	2,4000E+01	1,8000E+02	2,3000E+01	1,8500E+02	2,3000E+01	011030	3	118
1,9000E+02	2,4500E+01	1,9500E+02	3,9000E+01	1,9800E+02	6,8000E+01	011030	3	119
2,0000E+02	5,0000E+01	2,0500E+02	3,3000E+01	2,1000E+02	4,6000E+01	011030	3	120
2,1500E+02	2,7500E+01	2,2000E+02	2,6000E+01	2,2500E+02	3,8500E+01	011030	3	121
2,3000E+02	3,2000E+01	2,3300E+02	2,7000E+01	2,4000E+02	6,0000E+01	011030	3	122
2,5000E+02	2,0000E+01	2,6000E+02	1,9500E+01	2,7000E+02	2,0000E+01	011030	3	123
2,8000E+02	2,6500E+01	2,8700E+02	2,9500E+01	3,0000E+02	1,9500E+01	011030	3	124

3,1000E+02	2,1000E+01	3,2000E+02	2,6500E+01	3,3000E+02	3,6000E+01	1030	3	1	125
3,4500E+02	5,7000E+01	3,5000E+02	4,3000E+01	3,6000E+02	2,5500E+01	1030	3	1	126
3,7000E+02	3,1000E+01	3,7400E+02	3,4000E+01	3,9000E+02	2,5000E+01	1030	3	1	127
4,0000E+02	3,2000E+01	4,1000E+02	3,5000E+01	4,3500E+02	1,3000E+01	1030	3	1	128
4,4500E+02	3,3000E+01	4,5000E+02	3,4000E+01	4,6000E+02	2,4000E+01	1030	3	1	129
4,8000E+02	4,9000E+01	5,0000E+02	3,1000E+01	5,1000E+02	3,4500E+01	1030	3	1	130
5,1500E+02	3,0000E+01	5,2000E+02	2,7000E+01	5,6000E+02	1,8500E+01	1030	3	1	131
5,9000E+02	2,3500E+01	6,2000E+02	2,5000E+01	6,3000E+02	2,2500E+01	1030	3	1	132
6,6000E+02	1,9500E+01	6,8000E+02	3,2000E+01	7,1000E+02	4,2000E+01	1030	3	1	133
7,6000E+02	2,1000E+01	7,8000E+02	2,3000E+01	8,0000E+02	2,3700E+01	1030	3	1	134
8,2000E+02	2,4000E+01	8,4000E+02	2,4000E+01	9,0000E+02	2,2500E+01	1030	3	1	135
1,0000E+03	2,0700E+01	1,5000E+03	1,8750E+01	2,0000E+03	1,7500E+01	1030	3	1	136
2,5000E+03	1,6600E+01	3,0000E+03	1,7000E+01	3,5000E+03	1,7000E+01	1030	3	1	137
4,0000E+03	1,7300E+01	4,5000E+03	1,7000E+01	5,0000E+03	1,6500E+01	1030	3	1	138
5,5000E+03	1,5800E+01	6,0000E+03	1,4800E+01	6,8000E+03	1,3500E+01	1030	3	1	139
1,0000E+04	1,2250E+01	2,0000E+04	1,1100E+01	3,0000E+04	1,0450E+01	1030	3	1	140
4,0000E+04	1,0000E+01	5,0000E+04	9,6200E+00	6,0000E+04	9,3500E+00	1030	3	1	141
7,0000E+04	9,1300E+00	8,0000E+04	8,9000E+00	9,0000E+04	8,7500E+00	1030	3	1	142
1,0000E+05	8,6000E+00	1,2000E+05	8,4200E+00	1,5000E+05	8,1600E+00	1030	3	1	143
2,0000E+05	7,9000E+00	2,5000E+05	7,7200E+00	3,0000E+05	7,5400E+00	1030	3	1	144
4,0000E+05	7,4000E+00	5,0000E+05	7,3000E+00	6,0000E+05	7,2800E+00	1030	3	1	145
7,0000E+05	7,2700E+00	8,0000E+05	7,2600E+00	9,0000E+05	7,2500E+00	1030	3	1	146
1,0000E+06	7,2400E+00	1,1500E+06	7,2000E+00	1,5000E+06	7,1000E+00	1030	3	1	147
2,0000E+06	6,8000E+00	3,0000E+06	6,3000E+00	4,0000E+06	5,8000E+00	1030	3	1	148
5,0000E+06	5,4000E+00	6,0000E+06	5,2000E+00	6,4560E+06	5,0500E+00	1030	3	1	149
6,4970E+06	5,0200E+00	6,5630E+06	5,0000E+00	6,6300E+06	4,9800E+00	1030	3	1	150
6,6980E+06	4,9700E+00	6,8390E+06	4,9700E+00	6,9860E+06	4,9600E+00	1030	3	1	151
7,1400E+06	4,9600E+00	7,3000E+06	4,9500E+00	7,5550E+06	4,9500E+00	1030	3	1	152
7,8280E+06	4,9500E+00	8,0210E+06	4,9600E+00	8,2240E+06	4,9800E+00	1030	3	1	153
8,4380E+06	5,0000E+00	8,7800E+06	5,0500E+00	9,1510E+06	5,1500E+00	1030	3	1	154
9,4160E+06	5,2200E+00	9,8440E+06	5,4000E+00	1,0310E+07	5,6000E+00	1030	3	1	155
1,0830E+07	5,7000E+00	1,1400E+07	5,7500E+00	1,2030E+07	5,7500E+00	1030	3	1	156
1,2740E+07	5,7000E+00	1,3260E+07	5,6500E+00	1,3540E+07	5,6000E+00	1030	3	1	157
1,3820E+07	5,5000E+00	1,4120E+07	5,4500E+00	1,4440E+07	5,4000E+00	1030	3	1	158
1,4770E+07	5,3500E+00	1,5000E+07	5,3000E+00			1030	3	1	159
0,0	0,0	0	0	0		01030	3	0	160
64000,0	1,5590E+02	0	0	0		01030	3	2	161
0,0	0,0	0	0	2		2421030	3	2	162
3	2	242	5			1030	3	2	163
1,0000E-03	0,0000E+00	5,0000E+01	0,0000E+00	5,0000E+01	1,0746E+01	1030	3	2	164
5,1000E+01	9,1610E+00	5,2000E+01	1,6350E+01	5,3000E+01	9,2160E+00	1030	3	2	165
5,3500E+01	1,3539E+01	5,4000E+01	8,7390E+00	5,5000E+01	7,3080E+00	1030	3	2	166
5,6000E+01	7,9590E+00	5,6500E+01	8,9620E+00	5,7000E+01	7,4350E+00	1030	3	2	167
5,7500E+01	9,2020E+00	5,8000E+01	2,0430E+01	5,9000E+01	1,2259E+01	1030	3	2	168
6,0000E+01	7,6640E+00	6,1000E+01	8,7610E+00	6,1500E+01	6,6810E+00	1030	3	2	169
6,2500E+01	1,1281E+01	6,3500E+01	6,6850E+00	6,5000E+01	1,0861E+01	1030	3	2	170
6,6000E+01	9,0560E+00	6,6500E+01	1,2554E+01	6,7000E+01	8,0470E+00	1030	3	2	171
6,7500E+01	6,9180E+00	6,9000E+01	1,0369E+01	7,0000E+01	6,5750E+00	1030	3	2	172
7,1000E+01	6,8090E+00	7,2000E+01	6,5760E+00	7,2500E+01	6,9280E+00	1030	3	2	173
7,3000E+01	6,5760E+00	7,4000E+01	6,9310E+00	7,5000E+01	7,6490E+00	1030	3	2	174
7,6500E+01	6,5770E+00	7,7700E+01	1,0799E+01	7,8000E+01	7,9060E+00	1030	3	2	175
7,9000E+01	1,3026E+01	8,0000E+01	2,0490E+01	8,1000E+01	2,4750E+01	1030	3	2	176
8,1500E+01	2,1720E+01	8,3000E+01	8,4400E+00	8,4000E+01	1,0197E+01	1030	3	2	177
8,6500E+01	7,4630E+00	8,8000E+01	1,0644E+01	8,9000E+01	7,1560E+00	1030	3	2	178
9,0000E+01	6,7100E+00	9,1000E+01	7,3540E+00	9,2000E+01	7,4880E+00	1030	3	2	179
9,2500E+01	8,2660E+00	9,3000E+01	9,1810E+00	9,4000E+01	7,9520E+00	1030	3	2	180
9,5400E+01	7,5020E+00	9,6000E+01	8,2930E+00	9,6500E+01	1,0933E+01	1030	3	2	181
9,7000E+01	1,2264E+01	9,7500E+01	9,6290E+00	9,8000E+01	1,0962E+01	1030	3	2	182
9,9000E+01	9,7820E+00	1,0000E+02	1,0998E+01	1,0050E+02	1,5027E+01	1030	3	2	183
1,0100E+02	1,5042E+01	1,0200E+02	8,8770E+00	1,0300E+02	8,3440E+00	1030	3	2	184
1,0400E+02	8,6230E+00	1,0450E+02	1,0125E+01	1,0500E+02	1,4905E+01	1030	3	2	185
1,0700E+02	1,1121E+01	1,0750E+02	1,0854E+01	1,0800E+02	8,3790E+00	1030	3	2	186

1.0900E+02	9.0780E+00	1.1000E+02	1.2284E+01	1.1100E+02	1.4673E+01	1030	3	2	187
1.1200E+02	1.0925E+01	1.1300E+02	1.1221E+01	1.1400E+02	1.1801E+01	1030	3	2	188
1.1500E+02	1.2103E+01	1.1600E+02	1.2264E+01	1.1700E+02	1.1287E+01	1030	3	2	189
1.1800E+02	8.7310E+00	1.1900E+02	8.7390E+00	1.2000E+02	1.0184E+01	1030	3	2	190
1.2100E+02	1.5680E+01	1.2150E+02	1.9308E+01	1.2200E+02	1.4986E+01	1030	3	2	191
1.2300E+02	1.4577E+01	1.2400E+02	1.6351E+01	1.2500E+02	1.4189E+01	1030	3	2	192
1.2700E+02	9.6790E+00	1.2800E+02	8.3610E+00	1.2900E+02	1.1474E+01	1030	3	2	193
1.2950E+02	1.2963E+01	1.3050E+02	1.2983E+01	1.3200E+02	1.1071E+01	1030	3	2	194
1.3300E+02	1.0036E+01	1.3500E+02	9.1530E+00	1.3700E+02	1.0077E+01	1030	3	2	195
1.3800E+02	1.3886E+01	1.3900E+02	1.7105E+01	1.4000E+02	1.4080E+01	1030	3	2	196
1.4100E+02	1.1649E+01	1.4150E+02	1.1043E+01	1.4200E+02	1.0434E+01	1030	3	2	197
1.4300E+02	1.3218E+01	1.4500E+02	1.1705E+01	1.4600E+02	1.0321E+01	1030	3	2	198
1.4700E+02	1.1733E+01	1.4800E+02	1.5181E+01	1.4900E+02	1.7708E+01	1030	3	2	199
1.5000E+02	1.7894E+01	1.5050E+02	1.8066E+01	1.5200E+02	1.3378E+01	1030	3	2	200
1.5300E+02	1.0233E+01	1.5500E+02	1.0252E+01	1.6000E+02	1.0137E+01	1030	3	2	201
1.6500E+02	9.9350E+00	1.7000E+02	1.2198E+01	1.7250E+02	1.4796E+01	1030	3	2	202
1.7500E+02	9.4300E+00	1.8000E+02	9.2930E+00	1.8500E+02	9.3220E+00	1030	3	2	203
1.9000E+02	9.6080E+00	1.9500E+02	1.2154E+01	1.9800E+02	1.7246E+01	1030	3	2	204
2.0000E+02	1.4135E+01	2.0500E+02	1.1201E+01	2.1000E+02	1.3562E+01	1030	3	2	205
2.1500E+02	1.0295E+01	2.2000E+02	1.0055E+01	2.2500E+02	1.2372E+01	1030	3	2	206
2.3000E+02	1.1221E+01	2.3300E+02	1.0317E+01	2.4000E+02	1.6543E+01	1030	3	2	207
2.5000E+02	9.0850E+00	2.6000E+02	9.0250E+00	2.7000E+02	9.1580E+00	1030	3	2	208
2.8000E+02	1.0482E+01	2.8700E+02	1.1117E+01	3.0000E+02	9.1580E+00	1030	3	2	209
3.1000E+02	9.4980E+00	3.2000E+02	1.0676E+01	3.3000E+02	1.2720E+01	1030	3	2	210
3.4500E+02	1.7305E+01	3.5000E+02	1.4353E+01	3.6000E+02	1.0636E+01	1030	3	2	211
3.7000E+02	1.1880E+01	3.7400E+02	1.2560E+01	3.9000E+02	1.0641E+01	1030	3	2	212
4.0000E+02	1.2253E+01	4.1000E+02	1.2983E+01	4.3500E+02	8.0210E+00	1030	3	2	213
4.4500E+02	1.2700E+01	4.5000E+02	1.2958E+01	4.6000E+02	1.0646E+01	1030	3	2	214
4.8000E+02	1.6694E+01	5.0000E+02	1.2464E+01	5.1000E+02	1.3359E+01	1030	3	2	215
5.1500E+02	1.2278E+01	5.2000E+02	1.1559E+01	5.6000E+02	9.5410E+00	1030	3	2	216
5.9000E+02	1.0877E+01	6.2000E+02	1.1339E+01	6.3000E+02	1.0709E+01	1030	3	2	217
6.6000E+02	9.9740E+00	6.8000E+02	1.3367E+01	7.1000E+02	1.6187E+01	1030	3	2	218
7.6000E+02	1.0552E+01	7.8000E+02	1.1147E+01	8.0000E+02	1.1382E+01	1030	3	2	219
8.2000E+02	1.1506E+01	8.4000E+02	1.1543E+01	9.0000E+02	1.1212E+01	1030	3	2	220
1.0000E+03	1.0820E+01	1.5000E+03	1.0699E+01	2.0000E+03	1.0584E+01	1030	3	2	221
2.5000E+03	1.0478E+01	3.0000E+03	1.0832E+01	3.5000E+03	1.0999E+01	1030	3	2	222
4.0000E+03	1.1277E+01	4.5000E+03	1.1274E+01	5.0000E+03	1.1158E+01	1030	3	2	223
5.5000E+03	1.0925E+01	6.0000E+03	1.0526E+01	6.8000E+03	9.9890E+00	1030	3	2	224
1.0000E+04	1.0170E+01	2.0000E+04	9.6600E+00	3.0000E+04	9.2750E+00	1030	3	2	225
4.0000E+04	9.0420E+00	5.0000E+04	8.8050E+00	6.0000E+04	8.6320E+00	1030	3	2	226
7.0000E+04	8.4250E+00	8.0000E+04	8.1750E+00	9.0000E+04	8.0080E+00	1030	3	2	227
1.0000E+05	7.8390E+00	1.2000E+05	7.5900E+00	1.5000E+05	7.2320E+00	1030	3	2	228
2.0000E+05	6.8200E+00	2.5000E+05	6.4800E+00	3.0000E+05	6.1240E+00	1030	3	2	229
4.0000E+05	5.6620E+00	5.0000E+05	5.2660E+00	6.0000E+05	4.9520E+00	1030	3	2	230
7.0000E+05	4.6880E+00	8.0000E+05	4.4410E+00	9.0000E+05	4.2880E+00	1030	3	2	231
1.0000E+06	4.2550E+00	1.1500E+06	4.2340E+00	1.5000E+06	4.1930E+00	1030	3	2	232
2.0000E+06	3.9790E+00	3.0000E+06	3.5970E+00	4.0000E+06	3.1330E+00	1030	3	2	233
5.0000E+06	2.7450E+00	6.0000E+06	2.5640E+00	6.4560E+06	2.4800E+00	1030	3	2	234
6.4970E+06	2.4700E+00	6.5630E+06	2.4600E+00	6.6300E+06	2.4500E+00	1030	3	2	235
6.6980E+06	2.4300E+00	6.8390E+06	2.4100E+00	6.9860E+06	2.4000E+00	1030	3	2	236
7.1400E+06	2.3800E+00	7.3000E+06	2.3700E+00	7.5550E+06	2.3700E+00	1030	3	2	237
7.8280E+06	2.3900E+00	8.0210E+06	2.4000E+00	9.2240E+06	2.4500E+00	1030	3	2	238
8.4380E+06	2.5000E+00	8.7800E+06	2.6000E+00	9.1510E+06	2.7000E+00	1030	3	2	239
9.4160E+06	2.8000E+00	9.8440E+06	3.0000E+00	1.0310E+07	3.2500E+00	1030	3	2	240
1.0830E+07	3.4000E+00	1.1400E+07	3.4900E+00	1.2030E+07	3.5400E+00	1030	3	2	241
1.2740E+07	3.5100E+00	1.3260E+07	3.4650E+00	1.3540E+07	3.4200E+00	1030	3	2	242
1.3820E+07	3.3250E+00	1.4120E+07	3.2800E+00	1.4440E+07	3.2310E+00	1030	3	2	243
1.4770E+07	3.1820E+00	1.5000E+07	3.1320E+00			1030	3	2	244
0.0	0.0	0	0	0		01030	3	0	245
64000.0	1.5590E+02	0	99	0		01030	3	4	246
0.0	0.0	0	0	2		541030	3	4	247
2	2	54	5			1030	3	4	248

6.0000E+04	0.0000E+00	7.0000E+04	8.0000E-02	9.0000E+04	1.5000E-01	1030	3	4	249
9.0000E+04	2.2000E-01	1.0000E+05	2.8000E-01	1.2000E+05	4.1000E-01	1030	3	4	250
1.5000E+05	5.9000E-01	2.0000E+05	8.3000E-01	2.5000E+05	1.0500E+00	1030	3	4	251
3.0000E+05	1.2700E+00	4.0000E+05	1.6200E+00	5.0000E+05	1.9300E+00	1030	3	4	252
6.0000E+05	2.2300E+00	7.0000E+05	2.4800E+00	8.0000E+05	2.7100E+00	1030	3	4	253
9.0000E+05	2.8500E+00	1.0000E+06	2.8700E+00	1.1500E+06	2.8500E+00	1030	3	4	254
1.5000E+06	2.8000E+00	2.0000E+06	2.7400E+00	3.0000E+06	2.6700E+00	1030	3	4	255
4.0000E+06	2.6500E+00	5.0000E+06	2.6445E+00	6.0000E+06	2.6292E+00	1030	3	4	256
6.4560E+06	2.5642E+00	6.4970E+06	2.5414E+00	6.5630E+06	2.5265E+00	1030	3	4	257
6.6300E+06	2.5082E+00	6.6980E+06	2.5070E+00	6.8390E+06	2.4975E+00	1030	3	4	258
6.9860E+06	2.4606E+00	7.1400E+06	2.4388E+00	7.3000E+06	2.3942E+00	1030	3	4	259
7.5550E+06	2.3202E+00	7.8280E+06	2.1999E+00	8.0210E+06	2.1235E+00	1030	3	4	260
8.2240E+06	1.9992E+00	8.4380E+06	1.8588E+00	8.7800E+06	1.6216E+00	1030	3	4	261
9.1510E+06	1.3964E+00	9.4160E+06	1.2106E+00	9.8440E+06	9.6880E-01	1030	3	4	262
1.0310E+07	7.2310E-01	1.0830E+07	5.1130E-01	1.1400E+07	3.4550E-01	1030	3	4	263
1.2030E+07	2.0260E-01	1.2740E+07	1.1780E-01	1.3260E+07	8.1900E-02	1030	3	4	264
1.3540E+07	6.4700E-02	1.3820E+07	4.9100E-02	1.4120E+07	3.4800E-02	1030	3	4	265
1.4440E+07	2.6700E-02	1.4770E+07	1.9100E-02	1.5000E+07	2.1600E-02	1030	3	4	266
0.0	0.0	0	0	0	01030	3	0		267
64000.0	1.5590E+02	0	0	0	01030	3	16		268
0.0	-6.4560E+06	0	0	2	301030	3	16		269
2	2	30	5		1030	3	16		270
6.4560E+06	0.0000E+00	6.4970E+06	2.9000E-03	6.5630E+06	8.0000E-03	1030	3	16	271
6.6300E+06	1.6400E-02	6.6980E+06	2.7700E-02	6.8390E+06	5.7500E-02	1030	3	16	272
6.9860E+06	9.4600E-02	7.1400E+06	1.3660E-01	7.3000E+06	1.8150E-01	1030	3	16	273
7.5550E+06	2.5580E-01	7.8280E+06	3.5640E-01	8.0210E+06	4.3300E-01	1030	3	16	274
8.2240E+06	5.2750E-01	8.4380E+06	6.3810E-01	8.7800E+06	8.2560E-01	1030	3	16	275
9.1510E+06	1.0510E+00	9.4160E+06	1.2070E+00	9.8440E+06	1.4290E+00	1030	3	16	276
1.0310E+07	1.6250E+00	1.0830E+07	1.7870E+00	1.1400E+07	1.9130E+00	1030	3	16	277
1.2030E+07	2.0600E+00	1.2740E+07	2.0710E+00	1.3260E+07	2.1020E+00	1030	3	16	278
1.3540E+07	2.1140E+00	1.3820E+07	2.1100E+00	1.4120E+07	2.0880E+00	1030	3	16	279
1.4440E+07	2.0530E+00	1.4770E+07	1.9920E+00	1.5000E+07	1.9320E+00	1030	3	16	280
0.0	0.0	0	0	0	01030	3	0		281
64000.0	1.5590E+02	0	0	0	01030	3	17		282
0.0	-1.3410E+07	0	0	2	71030	3	17		283
2	2	7	5		1030	3	17		284
1.3260E+07	0.0000E+00	1.3540E+07	3.0000E-04	1.3820E+07	1.4900E-02	1030	3	17	285
1.4120E+07	4.6300E-02	1.4440E+07	8.8400E-02	1.4770E+07	1.5600E-01	1030	3	17	286
1.5000E+07	2.1360E-01				1030	3	17		287
0.0	0.0	0	0	0	01030	3	0		288
64000.0	1.5590E+02	0	0	0	01030	3	102		289
0.0	8.5200E+06	0	0	2	2421030	3	102		290
3	2	242	5		1030	3	102		291
1.0000E-03	0.0000E+00	5.0000E+01	0.0000E+00	5.0000E+01	2.5300E+00	1030	3	102	292
5.1000E+01	2.2839E+01	5.2000E+01	8.3650E+01	5.3000E+01	2.2784E+01	1030	3	102	293
5.3500E+01	6.1461E+01	5.4000E+01	1.9261E+01	5.5000E+01	6.6920E+00	1030	3	102	294
5.6000E+01	1.2041E+01	5.6500E+01	2.1038E+01	5.7000E+01	7.5650E+00	1030	3	102	295
5.7500E+01	2.2798E+01	5.8000E+01	1.1457E+02	5.9000E+01	4.7741E+01	1030	3	102	296
6.0000E+01	9.3360E+00	6.1000E+01	1.8239E+01	6.1500E+01	1.3190E+00	1030	3	102	297
6.2500E+01	3.8719E+01	6.3500E+01	1.3150E+00	6.5000E+01	3.4139E+01	1030	3	102	298
6.6000E+01	1.9944E+01	6.6500E+01	4.7446E+01	6.7000E+01	1.1953E+01	1030	3	102	299
6.7500E+01	3.0820E+00	6.9000E+01	2.9631E+01	7.0000E+01	4.2500E+01	1030	3	102	300
7.1000E+01	2.1910E+00	7.2000E+01	4.2400E+01	7.2500E+01	3.0720E+00	1030	3	102	301
7.3000E+01	4.2400E-01	7.4000E+01	3.0690E+00	7.5000E+01	8.3510E+00	1030	3	102	302
7.6500E+01	4.2300E-01	7.7700E+01	3.1201E+01	7.8000E+01	1.0094E+01	1030	3	102	303
7.9000E+01	4.6974E+01	8.0000E+01	1.0051E+02	8.1000E+01	1.3025E+02	1030	3	102	304
8.1500E+01	1.0828E+02	8.3000E+01	1.3560E+01	8.4000E+01	2.5803E+01	1030	3	102	305
8.6500E+01	6.5370E+00	8.8000E+01	2.8356E+01	8.9000E+01	4.3440E+00	1030	3	102	306
9.0000E+01	1.2900E+00	9.1000E+01	5.6460E+00	9.2000E+01	6.5120E+00	1030	3	102	307
9.2500E+01	1.1734E+01	9.3000E+01	1.7819E+01	9.4000E+01	9.5480E+00	1030	3	102	308
9.5400E+01	6.4980E+00	9.6000E+01	1.1707E+01	9.6500E+01	2.9067E+01	1030	3	102	309
9.7000E+01	3.7736E+01	9.7500E+01	2.0371E+01	9.8000E+01	2.9038E+01	1030	3	102	310

9,9000E+01	2.1218E+01	1.0000E+02	2.9002E+01	1.0050E+02	5,4973E+01	11030	3102	311
1,0100E+02	5,4958E+01	1.0200E+02	1,5123E+01	1,0300E+02	1,1656E+01	11030	3102	312
1,0400E+02	1,3377E+01	1.0450E+02	2,2875E+01	1,0500E+02	5,3095E+01	11030	3102	313
1,0700E+02	2,8879E+01	1.0750E+02	2,7146E+01	1,0800E+02	1,1621E+01	11030	3102	314
1,0900E+02	1,5922E+01	1.1000E+02	3,5716E+01	1,1100E+02	5,0327E+01	11030	3102	315
1,1200E+02	2,7075E+01	1.1300E+02	2,8779E+01	1,1400E+02	3,2199E+01	11030	3102	316
1,1500E+02	3,3897E+01	1.1600E+02	3,4736E+01	1,1700E+02	2,8713E+01	11030	3102	317
1,1800E+02	1,3269E+01	1.1900E+02	1,3261E+01	1,2000E+02	2,1816E+01	11030	3102	318
1,2100E+02	5,4320E+01	1.2150E+02	7,5692E+01	1,2200E+02	5,0014E+01	11030	3102	319
1,2300E+02	4,7423E+01	1.2400E+02	5,7649E+01	1,2500E+02	4,4811E+01	11030	3102	320
1,2700E+02	1,8321E+01	1.2800E+02	1,0639E+01	1,2900E+02	2,8526E+01	11030	3102	321
1,2950E+02	3,7037E+01	1.3050E+02	3,7017E+01	1,3200E+02	2,5929E+01	11030	3102	322
1,3300E+02	1,9964E+01	1.3500E+02	1,4847E+01	1,3700E+02	1,9923E+01	11030	3102	323
1,3800E+02	4,1114E+01	1.3900E+02	5,8895E+01	1,4000E+02	4,1920E+01	11030	3102	324
1,4100E+02	2,8351E+01	1.4150E+02	2,4957E+01	1,4200E+02	2,1566E+01	11030	3102	325
1,4300E+02	3,6782E+01	1.4500E+02	2,8295E+01	1,4600E+02	2,0679E+01	11030	3102	326
1,4700E+02	2,8267E+01	1.4800E+02	4,6819E+01	1,4900E+02	6,0292E+01	11030	3102	327
1,5000E+02	6,1106E+01	1.5050E+02	6,1934E+01	1,5200E+02	3,6622E+01	11030	3102	328
1,5300E+02	1,9767E+01	1.5500E+02	1,9748E+01	1,6000E+02	1,8863E+01	11030	3102	329
1,6500E+02	1,7565E+01	1.7000E+02	2,8802E+01	1,7250E+02	4,1704E+01	11030	3102	330
1,7500E+02	1,4570E+01	1.8000E+02	1,3707E+01	1,8500E+02	1,3678E+01	11030	3102	331
1,9000E+02	1,4892E+01	1.9500E+02	2,6846E+01	1,9800E+02	5,0754E+01	11030	3102	332
2,0000E+02	3,5865E+01	2.0500E+02	2,1799E+01	2,1000E+02	3,2438E+01	11030	3102	333
2,1500E+02	1,7205E+01	2.2000E+02	1,5945E+01	2,2500E+02	2,6128E+01	11030	3102	334
2,3000E+02	2,0779E+01	2.3300E+02	1,6683E+01	2,4000E+02	4,3457E+01	11030	3102	335
2,5000E+02	1,0915E+01	2.6000E+02	1,0475E+01	2,7000E+02	1,0842E+01	11030	3102	336
2,8000E+02	1,6018E+01	2.8700E+02	1,8383E+01	3,0000E+02	1,0342E+01	11030	3102	337
3,1000E+02	1,1502E+01	3.2000E+02	1,5824E+01	3,3000E+02	2,3280E+01	11030	3102	338
3,4500E+02	3,9695E+01	3.5000E+02	2,8647E+01	3,6000E+02	1,4864E+01	11030	3102	339
3,7000E+02	1,9120E+01	3.7400E+02	2,1440E+01	3,9000E+02	1,4359E+01	11030	3102	340
4,0000E+02	1,9747E+01	4.1000E+02	2,2017E+01	4,3500E+02	4,9790E+01	11030	3102	341
4,4500E+02	2,0300E+01	4.5000E+02	2,1042E+01	4,6000E+02	1,3354E+01	11030	3102	342
4,8000E+02	3,2306E+01	5.0000E+02	1,8536E+01	5,1000E+02	2,1141E+01	11030	3102	343
5,1500E+02	1,7722E+01	5.2000E+02	1,5441E+01	5,6000E+02	8,9590E+01	11030	3102	344
5,9000E+02	1,2623E+01	6.2000E+02	1,3661E+01	6,3000E+02	1,1791E+01	11030	3102	345
6,6000E+02	9,5260E+00	6.8000E+02	1,8633E+01	7,1000E+02	2,5813E+01	11030	3102	346
7,6000E+02	1,0448E+01	7.8000E+02	1,1853E+01	8,0000E+02	1,2318E+01	11030	3102	347
8,2000E+02	1,2494E+01	8.4000E+02	1,2457E+01	9,0000E+02	1,1288E+01	11030	3102	348
1,0000E+03	9,8800E+00	1.5000E+03	8,0510E+00	2,0000E+03	6,9160E+01	11030	3102	349
2,5000E+03	6,1220E+00	3.0000E+03	6,1680E+00	3,5000E+03	6,0010E+01	11030	3102	350
4,0000E+03	6,0230E+00	4.5000E+03	5,7260E+00	5,0000E+03	5,3420E+01	11030	3102	351
5,5000E+03	4,8750E+00	6.0000E+03	4,2740E+00	6,8000E+03	3,5110E+01	11030	3102	352
1,0000E+04	2,0800E+00	2.0000E+04	1,4400E+00	3,0000E+04	1,1750E+01	11030	3102	353
4,0000E+04	9,5800E+01	5.0000E+04	8,1500E+01	6,0000E+04	7,1800E+01	11030	3102	354
7,0000E+04	6,2500E+01	8.0000E+04	5,7500E+01	9,0000E+04	5,2200E+01	11030	3102	355
1,0000E+05	4,8100E+01	1.2000E+05	4,2000E+01	1,5000E+05	3,4800E+01	11030	3102	356
2,0000E+05	2,5000E+01	2.5000E+05	1,9000E+01	3,0000E+05	1,4600E+01	11030	3102	357
4,0000E+05	1,1800E+01	5.0000E+05	1,0400E+01	6,0000E+05	9,8000E+01	11030	3102	358
7,0000E+05	1,0200E+01	8.0000E+05	1,0900E+01	9,0000E+05	1,1200E+01	11030	3102	359
1,0000E+06	1,1500E+01	1.1500E+06	1,1600E+01	1,5000E+06	1,0700E+01	11030	3102	360
2,0000E+06	8,1000E+02	3.0000E+06	3,3000E+02	4,0000E+06	1,7000E+02	11030	3102	361
5,0000E+06	1,0500E+02	6.0000E+06	6,8000E+03	6,4560E+06	5,8000E+03	11030	3102	362
6,4970E+06	5,7000E+03	6.5630E+06	5,5000E+03	6,6300E+06	5,4000E+03	11030	3102	363
6,6980E+06	5,3000E+03	6.8390E+06	5,0000E+03	6,9860E+06	4,8000E+03	11030	3102	364
7,1400E+06	4,6000E+03	7.3000E+06	4,3000E+03	7,5550E+06	4,0000E+03	11030	3102	365
7,8280E+06	3,7000E+03	8.0210E+06	3,5000E+03	8,2240E+06	3,3000E+03	11030	3102	366
8,4380E+06	3,1000E+03	8.7800E+06	2,8000E+03	9,1510E+06	2,6000E+03	11030	3102	367
9,4160E+06	2,4000E+03	9.8440E+06	2,2000E+03	1,0310E+07	1,9000E+03	11030	3102	368
1,0830E+07	1,7000E+03	1.1400E+07	1,5000E+03	1,2030E+07	1,4000E+03	11030	3102	369
1,2740E+07	1,2000E+03	1.3260E+07	1,1000E+03	1,3540E+07	1,0000E+03	11030	3102	370
1,3820E+07	1,0000E+03	1.4120E+07	9,0000E+04	1,4440E+07	9,0000E+04	11030	3102	371
1,4770E+07	9,0000E+04	1.5000E+07	8,0000E+04			1030	3102	372

0.0	0.0	0	0	0	01030	3	0	373	
64000.0	1.5590E+02	0	0	0	01030	3251		374	
0.0	0.0	0	0	1	321030	3251		375	
32	3				1030	3251		376	
1.0000E-03	4.2762E-03	5.0000E+03	4.2762E-03	1.0000E+04	1.1276E+02	1030	3251	377	
5.0000E+04	5.9275E-02	1.0000E+05	1.1427E-01	2.0000E+05	2.1427E+01	11030	3251	378	
3.0000E+05	3.0269E-01	3.5000E+05	3.2028E-01	4.5000E+05	3.5924E+01	11030	3251	379	
5.0000E+05	4.1910E-01	5.5000E+05	4.2375E-01	5.0000E+05	4.3713E+01	11030	3251	380	
6.5000E+05	4.6108E-01	7.0000E+05	4.5748E-01	7.5000E+05	4.8545E+01	11030	3251	381	
8.0000E+05	4.4546E-01	8.5000E+05	5.2488E-01	9.5000E+05	5.4856E+01	11030	3251	382	
1.0000E+06	5.2088E-01	1.0500E+06	5.6414E-01	1.1000E+06	5.6687E+01	11030	3251	383	
1.2000E+06	6.3420E-01	1.3000E+06	6.5369E-01	1.3500E+06	6.5771E+01	11030	3251	384	
1.5000E+06	6.3197E-01	2.0000E+06	7.1914E-01	4.0000E+06	7.7653E+01	11030	3251	385	
6.0000E+06	7.3680E-01	8.0000E+06	7.3642E-01	1.0000E+07	7.9366E+01	11030	3251	386	
1.2000E+07	8.4946E-01	1.5000E+07	9.0550E-01			1030	3251	387	
0.0	0.0	0	0	0	01030	3	0	388	
64000.0	1.5590E+02	0	0	0	01030	3252		389	
0.0	0.0	0	0	1	321030	3252		390	
32	3				1030	3252		391	
1.0000E-03	1.2774E-02	5.0000E+03	1.2774E-02	1.0000E+04	1.2684E+02	1030	3252	392	
5.0000E+04	1.2068E-02	1.0000E+05	1.1363E-02	2.0000E+05	1.0080E+02	1030	3252	393	
3.0000E+05	8.9456E-03	3.5000E+05	8.7206E-03	4.5000E+05	8.2217E+03	1030	3252	394	
5.0000E+05	7.4535E-03	5.5000E+05	7.3940E-03	6.0000E+05	7.2236E+03	1030	3252	395	
6.5000E+05	6.9159E-03	7.0000E+05	6.9614E-03	7.5000E+05	6.6036E+03	1030	3252	396	
8.0000E+05	7.1165E-03	8.5000E+05	6.0983E-03	9.5000E+05	5.7949E+03	1030	3252	397	
1.0000E+06	6.1500E-03	1.0500E+06	5.5960E-03	1.1000E+06	5.5611E+03	1030	3252	398	
1.2000E+06	4.6970E-03	1.3000E+06	4.4476E-03	1.3500E+06	4.3964E+03	1030	3252	399	
1.5000E+06	4.7256E-03	2.0000E+06	3.6140E-03	4.0000E+06	2.8951E+03	1030	3252	400	
6.0000E+06	3.4434E-03	8.0000E+06	3.5089E-03	1.0000E+07	2.8244E+03	1030	3252	401	
1.2000E+07	2.1488E-03	1.5000E+07	1.5050E-03			1030	3252	402	
0.0	0.0	0	0	0	01030	3	0	403	
64000.0	1.5590E+02	0	0	0	01030	3253		404	
0.0	0.0	0	0	1	321030	3253		405	
32	3				1030	3253		406	
1.0000E-03	8.5343E-03	5.0000E+03	8.5343E-03	1.0000E+04	8.5041E+03	1030	3253	407	
5.0000E+04	8.2851E-03	1.0000E+05	8.0050E-03	2.0000E+05	7.3953E+03	1030	3253	408	
3.0000E+05	7.0874E-03	3.5000E+05	7.2913E-03	4.5000E+05	7.2140E+03	1030	3253	409	
5.0000E+05	6.7104E-03	5.5000E+05	6.7932E-03	6.0000E+05	7.1243E+03	1030	3253	410	
6.5000E+05	6.7421E-03	7.0000E+05	6.8624E-03	7.5000E+05	6.7681E+03	1030	3253	411	
8.0000E+05	7.2943E-03	8.5000E+05	6.5211E-03	9.5000E+05	6.5940E+03	1030	3253	412	
1.0000E+06	6.8327E-03	1.0500E+06	6.8641E-03	1.1000E+06	6.5703E+03	1030	3253	413	
1.2000E+06	5.8043E-03	1.3000E+06	5.6075E-03	1.3500E+06	5.7228E+03	1030	3253	414	
1.5000E+06	5.8723E-03	2.0000E+06	5.5882E-03	4.0000E+06	5.8142E+03	1030	3253	415	
6.0000E+06	6.5599E-03	8.0000E+06	6.1799E-03	1.0700E+07	5.3272E+03	1030	3253	416	
1.2000E+07	4.7882E-03	1.5000E+07	4.6593E-03			1030	3253	417	
0.0	0.0	0	0	0	01030	3	0	418	
0.0	0.0	0	0	0	01030	0	0	419	
64000.0	1.5590E+02	1	1	0	01030	4	2	420	
0.0	1.5590E+02	0	2	400	191030	4	2	421	
1.0000E+00	4.2800E-03	1.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	422
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	423
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	424
0.0000E+00	0.0000E+00	0.0000E+00	9.9998E-01	7.7000E-03	3.0000E+05	1030	4	2	425
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	426
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	427
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	428
9.9994E-01	1.1000E-02	6.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	429
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	430
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	431
0.0000E+00	2.0000E-05	7.7000E-03	9.9987E-01	1.4250E-02	1.0000E+04	1030	4	2	432
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	433
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	434

0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	6.0000E-05	1.0990E-02	1030	4	2	435
9.9979E-01	1.7490E-02	1.5000E-04	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	436
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	437
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	438
0.0000E+00	1.0000E-04	1.4250E-02	9.9969E-01	2.0720E-02	2.1000E-04	1030	4	2	439
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	440
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	441
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1.5000E-04	1.7490E-02	1030	4	2	442
9.9957E-01	2.3940E-02	2.8000E-04	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	443
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	444
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	445
0.0000E+00	2.1000E-04	2.0720E-02	9.9942E-01	2.7160E-02	3.7000E-04	1030	4	2	446
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	447
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	448
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	2.8000E-04	2.3940E-02	1030	4	2	449
9.9926E-01	3.0370E-02	4.6000E-04	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	450
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	451
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	452
0.0000E+00	3.7000E-04	2.7150E-02	9.9907E-01	3.3580E-02	5.6000E-04	1030	4	2	453
1.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	454
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	455
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	4.6000E-04	3.0370E-02	1030	4	2	456
9.9887E-01	3.6790E-02	6.7000E-04	1.0000E-05	0.0000E+00	0.0000E+00	1030	4	2	457
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	458
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	459
-1.0000E-05	5.6000E-04	3.3580E-02	9.9864E-01	4.0000E-02	8.0000E-04	1030	4	2	460
1.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	461
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	462
0.0000E+00	0.0000E+00	0.0000E+00	1.0000E-05	6.7000E-04	3.6780E-02	1030	4	2	463
9.9839E-01	4.3200E-02	9.3000E-04	1.0000E-05	0.0000E+00	0.0000E+00	1030	4	2	464
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	465
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	466
-1.0000E-05	8.0000E-04	3.9990E-02	9.9813E-01	4.6400E-02	1.0800E-03	1030	4	2	467
2.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	468
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	469
0.0000E+00	0.0000E+00	0.0000E+00	1.0000E-05	9.3000E-04	4.3190E-02	1030	4	2	470
9.9784E-01	4.9600E-02	1.2300E-03	2.0000E-05	0.0000E+00	0.0000E+00	1030	4	2	471
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	472
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	473
-2.0000E-05	1.0700E-03	4.6390E-02	9.9753E-01	5.2800E-02	1.3900E-03	1030	4	2	474
2.0000E-05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	475
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	476
0.0000E+00	0.0000E+00	0.0000E+00	2.0000E-05	1.2300E-03	4.9590E-02	1030	4	2	477
9.9720E-01	5.6000E-02	1.5700E-03	3.0000E-05	0.0000E+00	0.0000E+00	1030	4	2	478
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	479
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	480
-2.0000E-05	1.3900E-03	5.2790E-02	9.9685E-01	5.9190E-02	1.7500E-03	1030	4	2	481
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	482
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	483
0.0000E+00	0.0000E+00	0.0000E+00	3.0000E-05	1.5700E-03	5.5980E-02	1030	4	2	484
9.9648E-01	6.2390E-02	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	485
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	486
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	1030	4	2	487
-3.0000E-05	1.7500E-03	5.9170E-02	9.9609E-01			1030	4	2	488
0.0	0.0	0	0	1		321030	4	2	489
32	3					1030	4	2	490
0.0	1.0000E-03	0	0	1		01030	4	2	491
0.0000E+00						1030	4	2	492
0.0	5.0000E+03	0	0	1		01030	4	2	493
0.0000E+00						1030	4	2	494
0.0	1.0000E+04	0	0	1		01030	4	2	495
7.0000E-03						1030	4	2	496

0.0	5.0000E+04	0	0	1	01030	4	2	497	
5.5000E-02					1030	4	2	498	
0.0	1.0000E+05	0	0	1	01030	4	2	499	
1.1000E-01					1030	4	2	500	
0.0	2.0000E+05	0	0	2	01030	4	2	501	
2.1000E-01	0.0000E+00				1030	4	2	502	
0.0	3.0000E+05	0	0	5	01030	4	2	503	
2.9866E-01	6.1439E-02	7.5593E-03	1.4483E-02	5.7993E-03	1030	4	2	504	
0.0	3.5000E+05	0	0	5	01030	4	2	505	
3.1657E-01	1.1726E-01	1.3072E-02	5.2536E-03	5.9065E-03	1030	4	2	506	
0.0	4.5000E+05	0	0	5	01030	4	2	507	
3.5573E-01	1.5588E-01	2.2413E-03	9.6848E-03	1.9351E-02	1030	4	2	508	
0.0	5.0000E+05	0	0	5	01030	4	2	509	
4.1544E-01	1.6592E-01	4.0622E-02	2.3273E-03	9.6818E-03	1030	4	2	510	
0.0	5.5000E+05	0	0	5	01030	4	2	511	
4.2019E-01	1.8363E-01	3.3870E-02	3.7260E-03	7.5672E-03	1030	4	2	512	
0.0	6.0000E+05	0	0	5	01030	4	2	513	
4.3379E-01	2.4614E-01	6.1858E-02	2.5928E-02	1.0721E-02	1030	4	2	514	
0.0	6.5000E+05	0	0	5	01030	4	2	515	
4.5772E-01	2.2961E-01	4.2369E-02	1.7135E-02	5.7864E-03	1030	4	2	516	
0.0	7.0000E+05	0	0	5	01030	4	2	517	
4.5409E-01	2.4005E-01	6.9787E-02	4.0339E-04	1.3349E-02	1030	4	2	518	
0.0	7.5000E+05	0	0	5	01030	4	2	519	
4.8221E-01	2.6745E-01	7.2014E-02	2.2395E-02	5.9640E-03	1030	4	2	520	
0.0	8.0000E+05	0	0	5	01030	4	2	521	
4.4226E-01	2.7939E-01	7.6082E-02	1.4451E-02	7.3753E-03	1030	4	2	522	
0.0	8.5000E+05	0	0	5	01030	4	2	523	
5.2167E-01	2.9572E-01	9.4220E-02	3.0389E-02	2.1003E-02	1030	4	2	524	
0.0	9.5000E+05	0	0	5	01030	4	2	525	
5.4551E-01	3.3833E-01	1.1892E-01	3.2199E-02	1.6878E-02	1030	4	2	526	
0.0	1.0000E+06	0	0	5	01030	4	2	527	
5.1779E-01	3.2479E-01	9.9252E-02	3.6299E-02	1.9717E-02	1030	4	2	528	
0.0	1.0500E+06	0	0	5	01030	4	2	529	
5.6140E-01	3.8847E-01	1.2728E-01	4.9811E-02	1.9754E-03	1030	4	2	530	
0.0	1.1000E+06	0	0	5	01030	4	2	531	
5.6395E-01	3.6243E-01	1.2523E-01	5.8691E-02	1.0687E-02	1030	4	2	532	
0.0	1.2000E+06	0	0	5	01030	4	2	533	
6.3142E-01	3.9512E-01	1.5140E-01	4.1434E-02	3.6230E-03	1030	4	2	534	
0.0	1.3000E+06	0	0	5	01030	4	2	535	
6.5083E-01	4.1125E-01	1.8827E-01	5.8580E-02	2.7136E-02	1030	4	2	536	
0.0	1.3500E+06	0	0	5	01030	4	2	537	
6.5490E-01	4.2727E-01	1.9399E-01	6.2634E-02	2.8883E-02	1030	4	2	538	
0.0	1.5000E+06	0	0	5	01030	4	2	539	
6.2910E-01	3.9748E-01	1.6995E-01	4.1733E-02	1.9797E-02	1030	4	2	540	
0.0	2.0000E+06	0	0	8	01030	4	2	541	
7.1648E-01	5.2065E-01	3.5395E-01	1.5410E-01	3.7324E-02	1.3162E-02	1030	4	2	542
1.2704E-03	3.5335E-04				1030	4	2	543	
0.0	4.0000E+06	0	0	12	01030	4	2	544	
7.7330E-01	6.2808E-01	4.5507E-01	2.9057E-01	1.3367E-01	8.2653E-02	1030	4	2	545
3.0991E-02	1.2124E-02	3.2797E-04	4.3491E-04	3.7240E-05	7.0748E-06	1030	4	2	546
0.0	6.0000E+06	0	0	14	01030	4	2	547	
7.3069E-01	6.0572E-01	4.9090E-01	3.8683E-01	2.5053E-01	1.9594E-01	1030	4	2	548
1.4475E-01	7.3964E-02	1.9076E-02	1.1079E-02	1.6012E-03	5.0853E-04	1030	4	2	549
6.8409E-05	1.1734E-05					1030	4	2	550
0.0	8.0000E+06	0	0	16	01030	4	2	551	
7.2563E-01	5.7423E-01	4.7426E-01	4.0485E-01	3.4055E-01	2.8360E-01	1030	4	2	552
2.5337E-01	1.8273E-01	9.4418E-02	4.7251E-02	1.1286E-02	4.5192E-03	1030	4	2	553
7.4033E-04	2.0308E-04	3.3095E-05	6.5458E-06			1030	4	2	554
0.0	1.0000E+07	0	0	18	01030	4	2	555	
7.7939E-01	6.1332E-01	4.9257E-01	4.2530E-01	3.7050E-01	3.2746E-01	1030	4	2	556
2.9080E-01	2.4381E-01	1.5808E-01	8.5243E-02	3.1443E-02	1.3907E-02	1030	4	2	557
2.9501E-03	1.1055E-03	1.8980E-04	4.8021E-05	1.0008E-05	2.0456E-06	1030	4	2	558

0.0	1.2000E+07	0	0	18	01030	4	2	559	
8.3245E-01	6.8499E-01	5.6128E-01	4.7846E-01	4.0963E-01	3.6274E-01	11030	4	2	560
3.1160E-01	2.6591E-01	1.9032E-01	1.1428E-01	5.4256E-02	2.6118E-02	1030	4	2	561
7.8721E-03	3.4944E-03	6.8432E-04	2.5040E-04	6.3679E-05	1.4927E-05	1030	4	2	562
0.0	1.5000E+07	0	0	19	01030	4	2	563	
8.8312E-01	7.7670E-01	6.6948E-01	5.7712E-01	4.9086E-01	4.2170E-01	11030	4	2	564
3.5444E-01	2.9393E-01	2.2524E-01	1.5322E-01	9.0171E-02	5.2906E-02	1030	4	2	565
2.5641E-02	1.2656E-02	3.7585E-03	1.8381E-03	4.9523E-04	1.3700E-04	1030	4	2	566
3.5864E-05						1030	4	2	567
0.0	0.0	0	0	0	01030	4	0	568	
0.0	0.0	0	0	0	01030	0	0	569	
64000.0	1.5590E+02	0	0	1	01030	5	4	570	
0.0	0.0	0	9	1	21030	5	4	571	
2	2				1030	5	4	572	
6.0000E+04	1.0000E+00	1.5000E+07	1.0000E+00		1030	5	4	573	
0.0	0.0	0	0	1	21030	5	4	574	
2	5				1030	5	4	575	
6.0000E+04	6.2990E+04	1.5000E+07	9.9610E+05		1030	5	4	576	
0.0	0.0	0	0	0	01030	5	0	577	
64000.0	1.5590E+02	0	0	1	01030	5	16	578	
0.0	0.0	0	9	1	21030	5	16	579	
2	2				1030	5	16	580	
6.4560E+06	1.0000E+00	1.5000E+07	1.0000E+00		1030	5	16	581	
0.0	0.0	0	0	1	21030	5	16	582	
2	2				1030	5	16	583	
6.4560E+06	1.0000E+05	1.5000E+07	2.9900E+06		1030	5	16	584	
0.0	0.0	0	0	0	01030	5	0	585	
64000.0	1.5590E+02	0	0	1	01030	5	17	586	
0.0	0.0	0	9	1	21030	5	17	587	
2	2				1030	5	17	588	
1.3260E+07	1.0000E+00	1.5000E+07	1.0000E+00		1030	5	17	589	
0.0	0.0	0	0	1	21030	5	17	590	
2	2				1030	5	17	591	
1.3260E+07	1.0000E+04	1.5000E+07	3.4800E+05		1030	5	17	592	
0.0	0.0	0	0	0	01030	5	0	593	
0.0	0.0	0	0	0	01030	0	0	594	
64000.0	1.5590E+02	0	0	0	01030	7	4	595	
0.0	0.0	0	0	12	11030	7	4	596	
0.0000E+00	5.9300E+01	1.5590E+02	1.5000E+00	0.0	0.01030	7	4	597	
1.0000E+00	8.0000E+00	1.5590E+02	0.0	0.0	0.01030	7	4	598	
0.0	0.0	0	0	0	01030	7	0	599	
0.0	0.0	0	0	0	01030	0	0	600	
0.0	0.0	0	0	0	0	0	0	601	

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